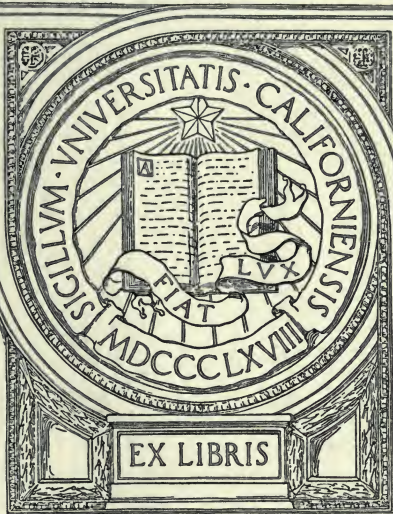


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GAMONIA

THE
FATHER

Trurotham, with the commencement of a Plague



A good beginning makes a good ending

GAMONIA

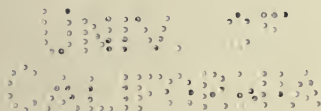
OR, THE ART OF PRESERVING GAME;
AND AN IMPROVED METHOD OF
MAKING PLANTATIONS AND
COVERS, EXPLAINED AND
ILLUSTRATED

By LAWRENCE RAWSTORNE, Esq.

WITH FIFTEEN COLOURED DRAWINGS

BY J. T. RAWLINS

TAKEN ON THE SPOT



A NEW EDITION

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NOTE

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TO
EDWARD EARL OF DERBY

I have been induced to inscribe your name at the head of the following pages, not only from long uninterrupted friendship, and from my unmixed feelings of regard and respect for your character, but from my admiration of the zeal and perseverance with which you have enlarged the bounds of science, and extended the field of improvement in the creation of what is new in picturesque beauty, and the embellishment of what is old.

Nature has not laid open before you her volumes in vain. Your zoological acquirements, far exceeding any private collection, have stamped in deep and indelible characters the infinite variety of her works; whilst the study of these has opened

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to you new sources of philosophical research, and a never failing resource and delight from contemplative inquiries.

I have another motive for addressing you of a more personal nature. We have both followed the same pursuits, we have endeavoured as I hope to render the amusement they afford not incompatible with more useful employments. I am therefore vain enough to suppose that you will not object to sanction, with your name, discussions on subjects of a mutual interest. That your health may long enable you to pursue a reasonable recreation with the ardour of youth and the experience of age, is my sincere wish.

Penwortham, Oct. 17th, 1837.

DESCRIPTION OF THE PLATES

Frontispiece to Part I.—Penwortham, with the commencement of a Battue.

Frontispiece to Part II.—Penwortham, with the conclusion of a Battue.

	<i>page</i>
Tulketh Hall and Town of Preston	1
The Vale of Ribble	2
The Castle Hill	31
The Lower Ridding	112
Penwortham Church	115
The Round Wood	116
Blashaw Dam	117
The Crow Wood	119
The Hangsman's Bank	120
West End of the Four-Acre	122
Howick, from Blashaw Wood	123
East End of the Four-Acre	125
Penwortham	126



PREFACE

AMONGST the various arts that contribute to enrich the coffers of the landed proprietor, and to gladden the existence of the lover of field sports, there is none more interesting or important than that of planting, and none which is less thoroughly understood, particularly as it relates to covers for game. Although so many books have been written on the subject, yet it does not appear that there has been one, until within the last few years, that has contained such a general and comprehensive system as would enable the planter in the early stage of his practice to execute his work to the greatest advantage, and to lay out his plantations in such a way as to give the largest profit and to answer in the most perfect manner the purposes for which they were intended. Thus as his knowledge had to be derived more from his own experience than from any principles already established, a great deal of labour and expence

has been almost entirely thrown away. Trees have been put into the ground without proper preparation of the soil, without draining, and without being judiciously selected and mixed. Covers have been made without the underwood necessary for game; and thus in a few years time, after the side branches of the trees have died away, the ground under them has become little better than so much grass land, and the object, for which the cover was made, has almost entirely failed.

To remedy these defects it may be of use to those interested in rural pursuits and amusements, if some experienced practitioner in this branch of science would give a compendious view of the most advantageous mode by which plantations and covers can be brought to the highest perfection within a certain time. Sir Henry Steuart has given to the world an elaborate and scientific work, in which the properties of trees, and their general treatment, but more particularly as to their removal, is illustrated with great skill and knowledge. Mr. Cobbett, in his "Woodlands", has entered more into practical detail; and is sensible, instructive, and satisfactory. But neither of them have touched upon covers for game. The delights of a battue, contingent on such a creation, seem never once to have entered into their calculations.

To those who are addicted to the excitements of field sports, and who have had an opportunity of discerning how inefficient the generality of covers are as preserves for game, it may not be useless to find the deficiency here complained of, in some degree supplied by remarks which concern alike the planter and the sportsman. In an age, when competition is a ruling passion, when the higher orders are striving for distinction in the splendour of their residences and the luxuries attached to them, it may be of service to the amateur of the trigger to discover, how his endeavours may be best crowned with success in one of the most bewitching of rural amusements. He will then not be seen incommoded with the overflowings of a bilious temperament, pouring forth the vials of his wrath upon his gamekeeper, when he ought rather to accuse his own mismanagement, nor expect to find an ill-formed and neglected cover the resort of the pheasant, when it is entirely destitute of every requisite for giving them shelter and protection.

GAMONIA

PART I



GAMONIA

PART I

THERE has arisen of late years a great rage for planting, not only from that spirit of improvement which has displayed itself in adorning the mansions of the rich, but from the introduction of Battues, which require extensive preserves and numerous covers for the encouragement of game. When we consider the changes which have taken place in the conveniences and luxuries of life from an increase of wealth, and a wider diffusion of knowledge, we shall not be surprised that the modern sportsman has enlarged his views along with the means of attaining them; and that what some time ago was considered as the perfection of the art, should now be denominated slow.

The veteran who formerly prided himself more on the skill of his performance, than the extent of his powers and the quantity slain, now vies with the youngest of the set to place himself at the head of the list in a day's slaughter. The rising generation, more prompt in their decision and quicker in their

aim than their more elderly antagonists, are as insatiate in their appetite for destruction, as they are murderous in the execution of it; and it is a thing that would scarcely have been credited by our forefathers that two shots should kill in one day three hundred and thirty pheasants, which was done some few years ago at Coome in Worcestershire.

It is not many years since pheasants became so plentiful in the country as to afford an object of general diversion. They were before either confined to Norfolk, or thinly scattered over large tracts of woodland, in which the difficulty of the pursuit enhanced the value of the prey. Thus it was that either some particular soils were supposed alone favourable for their production; or it was thought that though they might be bred, they could not be induced to remain, without an extensive range of covers.

Now the reverse of this is perhaps the real case.

Although some soils may be better for breeding than others, and likewise such as pheasants will prefer, yet there is none but what will fully repay the labour and anxiety of the judicious preserver. Natural food from ploughed land seems almost necessary to them, yet in some countries, where there is nothing but grass, such as in Herefordshire, artificial food only is used in summer as well as winter, and that with perfect success. In regard to large covers, though

The Vale of Riddle.



The New Sporting School.



they may be pleasanter to shoot in, as affording a wilder sport, yet as far as pheasants are concerned, they are rather injurious than otherwise. In a small cover the birds are better kept together and fed; are better guarded from poachers; and more easily defended from vermin. The pheasant is an extremely timid bird, and when disturbed must have a certain place of refuge and concealment. The nature of the cover and the shelter it affords, are therefore more material than its size. Some think that with a certain number of acres thickly covered over with trees, and with these drawn up like so many bare poles, the object of their anxious wishes will be fully attained.

Nothing can be more fallacious than such an expectation.

Grass perhaps half dead and withering, under an impervious shade of overhanging branches, with here and there a solitary thistle, is a place of abode ill suited to the disposition and peculiarities of a bird so naturally shy. Trees themselves are of little or no use except for the pheasants to perch in. A strong growth of underwood, with a mixture of briars and brambles that retain their leaves in the winter, is the best calculated for their shelter and protection. This, as they think, will supply an impenetrable denseness of thicket to screen them from the eye of the curious observer, or to guard them from the attacks of an invading foe. Such indeed is their love of retirement from the public gaze, such their dread of exposure,

that they prefer trusting their security to their feet rather than to their wings. A thick, grassy or sedgy cover may offer an inviting seat to the hare or a resting place to the restless rabbit, but by the pheasant it is considered an insidious receptacle, big with suspicion and alarm. Thus a cover should be rather to a certain degree open, than too close underneath, to give them a greater facility of escape from their active pursuers.

A cover of about five or six acres or even considerably less, will give every advantage of attraction and protection to pheasants; and there will be more execution done in it in proportion to its size, than in one of larger dimensions.

If the whole extent of covers be a new creation, there should be a central preserve with two or three smaller ones around it. The former may be of a squarer shape than the others, which are best made oblong from about sixty to one hundred yards in width; and contracting at the end which lies towards the central preserve to about one half of the widest part. The whole of it may then be taken at once, and the pheasants being driven into a more confined space at the end, the effect will be more brilliant from a greater number being shown in the air at the same time. In a square cover which requires being taken at different times, the pheasants avoid the beaters by running on one side, and thus many of them escape, and are never seen.

The respective position of the covers being arranged, great attention is to be paid to the ground on which they are to be made. In the choice of this, there is no better guide, than to fix on that which has been already much frequented by game. They know best what suits them. Care should be taken, that as much as circumstances will admit, each cover should lie well to the sun, and, if possible, that there should be a running stream through it. Pheasants as well as all animals love warmth and shelter, and in a hard frost they will go any distance for water, which is quite necessary to them. At that time, if only a particular cover be well supplied with water, it will be seen that almost every bird will be collected there. Any rough ground also affords protection. An old pit, or any moderate inequality of surface, should be taken advantage of. But it is better to have the surface in a general way rather flat, than too hilly. All birds like to move on level ground, besides which, they are more exposed to view on a declivity, and there is nothing that pheasants are more fond of than concealment.

The next consideration is the manner in which the covers are to be made ; and in doing this regard is to be had to the proper preparation of the soil. This is perhaps the most important business of all, and most conducive to a successful issue ; but it is too often ill attended to and little understood.

The method of planting on grass land seems now

to be nearly exploded. This is what is commonly called the Scotch system, though the Scotch seem not inclined to acknowledge it as their own. Yet it will be admitted by them that it has been much practised in their country, and it has been no uncommon thing for persons to be sent down from thence to plant large tracts of land in this way at so much the acre. Work executed by contract is frequently but ill performed. Although it may be agreed upon that the plantation is to be made over at a fixed period with a certain number of trees then alive, yet from want of the ground not being properly prepared, many of them will make but slender shoots for several years. The ground will at all times have its fertilizing powers brought into greater activity by being well loosened and stirred, and by this being done the smaller fibres of the roots will be better able to vegetate and extend themselves. If the pitting system be adopted, the hole made will retain the water like a tea-cup, though this may not be apparent to the eye. The consequence will be that a great part of the roots will perish ; and then the top will die ; or the whole plant languish and pine, and thus be very slow in making any forward push.

If then it be desirable to promote an early and vigorous growth by the stimulative process of working the land, it may be of use to examine the different modes of doing this, and then to point out which is the most preferable.

Grass land may be prepared by being ploughed in

the common manner, and having a corn crop taken from it. This will be of service in rotting the sods and pulverizing the soil. But it is a doubt whether the advantage from it is a sufficient compensation for the impoverishment arising from any white crop being grown. This however is certainly an improvement upon the system before alluded to ; as if in the second year before the winter frosts set in, the land be laid up in ridges and in a rough state, the amelioration of it will be going on, and it may the more easily be worked into a fine friable tilth. There is also another benefit to be derived from it, that the land may be laid into a proper form. This is by far the most important thing of all in the whole art of planting, and without it in most soils no trees will do well. It may therefore be here material to speak once for all of the form in which the land should be laid, and the more this can be adhered to, or even effected in old plantations, the better success may be expected.

Stagnant water is the bane of all kinds of trees as well as of every good vegetable production. Some sorts of trees may stand it better than others, but even the willow, luxuriating as it does in occasional irrigations, will not bear wet constantly lying at the roots. If therefore judicious draining be necessary to keep the plants in a healthy state, in the same manner as a pure air and dry soil is conducive to the health of the human body, it remains to be seen upon what principles the mode of effecting it is to be established, and on what process executed.

The first step towards it is to determine in what way water acts upon the soil. On this point there are two different opinions. Some suppose that water runs through the upper stratum of lighter soil until it meets with a denser and more impenetrable body below, where it stops until it is carried off. To cut drains therefore across the fall, would, as it were, tap the part where the mischief lies, and thus lay the land dry. Now though this may be true to a certain extent ; though it cannot be denied, that the water will in time sink down into the ground ; that it will sink faster in light soils than in retentive ones ; in those which have been well stirred rather than in those which have been indurated from time, yet it cannot be admitted that it passes through so quick but that material injury may be effected before it either evaporates or passes off to below. This is abundantly proved by observing the difference of a tree planted on an eminence, or in a hollow. If in draining across the fall the soil is thrown on the upper side, the water will be found dammed up ; and no tree will then grow there as it should do. Even if the soil be thrown on the under side, the further the trees recede from the drain above them the slower will be their growth. This shows the inutility of the tapping system, which may do very well for carrying off water from springs, but not that which lies on the surface.

It may therefore be taken as an undeniable fact that water runs on the surface. This is true even in

a piece of raw moss, where, if any where, the water might be supposed to sink into the ground immediately on falling ; but even here, if there is a hollow in any part and no passage made for the water to escape at the side, there it will lodge and prevent the growth of any thing except aquatic plants. If further proof was wanting, let it be observed where the rushes grow in a field, not on the ridge of the but, but at the bottom of it. Wherever there is a low part, whatever may be the depth of soil or quality, there vegetation will languish, and the land get starved unless the wet is removed.

To lay the land therefore perfectly dry and to give a regular and constant passage off for the water, an artificial fall must be created by throwing the land into beds. These should be eight yards wide, they should be well rounded in the middle, but not raised too high ; or if there should be a scarcity of soil, there might be a danger of the sides being left bare. By the land being thus formed, the water will be found to run into the side drains, and from thence into the main ones, and so be carried off for good.

Trenching with the spade is the most effectual, and perhaps in the end the cheapest way of preparing land for planting. By this, the land will be best thrown into the beds already described, and these may be of such a shape as to give an easy and regular fall of the water into the gutters at the sides. The soil taken out from these quite down to the clay, will assist

further in laying the land dry, and being spread over the top will give a greater depth for the trees to grow in.

Sir Henry Steuart, in his admirable book "The Planter's Guide," has entered at length (p. 482) into the advantages of trenching for eradicating rushes. These he considers to proceed from two causes; underground water, and tenacity of soil, which retains water like a cup, and for which he says no cure has been found. With respect to underground water arising from springs, he may be perfectly correct in his opinion; but he seems to labour under a mistake if he supposes the surface water is to be carried off the same as the other. In like manner there is no foundation for saying, that no cure has been found for destroying rushes in a tenacious soil. An instance to the contrary may be easily adduced. A field of a very stiff nature, with a thin upper stratum, and a strong clayey bottom, had been laid down to grass in butts of eight yards in width. In a few years time it was entirely covered with rushes. A trial was then made of tile draining in the reins. The effect was apparent the very first year, and in a few years scarcely a rush was to be seen, and after being covered with a compost of lime and sea slutch an entirely new verdure made its appearance. This proves in the most striking manner that rain water runs on the surface, and consequently the more tenacious the land is, the easier it is to lay it dry. Sir Henry Steuart has thought otherwise, and acted upon a different principle, and has

therefore been led into a false conclusion. The land, he speaks of as having trenched, was done under peculiarly favourable circumstances. It lay on a declivity, and a light porous stratum being underneath, this would act just as an open drain. It also remained in grass. Had it been under the plough and worked out to a dead inert piece of matter, the result might have been different.

The expence of trenching, though it may appear considerable at first sight, yet, considering all its advantages, is perhaps as cheap a method of preparing the land or more so, than any other. The mode of executing it is so fully and accurately detailed in Mr. Cobbett's excellent work on planting the "Woodlands," that it might be sufficient merely to refer to that; but as one object here is to glean from others, what may be worth collecting, his plan is here laid down in an abridgement with some alterations.

The ground is first to be marked out by a nick of the spade into the size wanted for the beds, these being eight yards in width, and running at right angles from the fence. Adjoining to the fence and following the line of it, there may be made a bed only one half the width of the others, and that sloping all the way from the hedge. The work is then to be proceeded in after the usual manner, the soil being taken out for the trench and removed by the wheelbarrow to the other end of the bed to fill up the vacuum left there on finishing it. It is to be done at

two spits with the spade, the sod being laid at the bottom, and the new soil being thus brought to the top. It is not so easy to speak to the depth from the surface being uneven. If the beds be tolerably raised in the middle, the depth will perhaps be twenty inches in the centre and about sixteen at the sides. The cost is 1s. 6d. per rod of eight yards in stiff land and 1s. 3d. in light. The former would be 10l. the Cheshire acre of eight yards to the rod, and 5l. 10s. for the statute. It may be much doubted, whether if it was necessary to clean and work the same by a fallow with the plough, it could be done at less expence than this, every thing reckoned in, during perhaps a wet season. The price is so named from calculating labour from 20d. to 2s. a day, and a good workman at this rate will earn from 2s. 3d. to 2s. 6d. a day in the summer time. Mr. Cobbett recommends it being done by the day, as if by the piece, it is apt to be neglected and not done the proper depth. But though there is danger of this, even when the men are well over-looked, yet task work has numerous advantages. It gives encouragement to a hard working man, and it is what he much prefers; to an idle one it is a great punishment, and therefore puts the burthen where it should be. There are also frequently some on an estate, to whom it is the interest of the landlord to give employment, if it can be done without much disadvantage. It is not because they are such good workmen, but because they get into arrear of rent, and the only chance of getting this from them is by making them work it out. It may therefore in this case answer to

both parties, if such defaulters dont rely upon it as a too certain resource, and keep back their payments with a view to the indulgence.

This then, it may be confidently asserted, is the best way for preparing land for planting, either trees or willows from cuttings. It enables the roots to luxuriate in a loose friable mould, and it brings up to their immediate use a new and virgin soil. But the laying of it dry is perhaps for a permanency of more utility than any thing. Neither Sir Henry Steuart nor Mr. Cobbett have ever mentioned how the water is to be got off. This seems a very defective part of their system. If the trenching is done on a dead level, the water will stagnate below, although it may filter through the upper stratum and not be apparent to the eye. When the roots reach this depth, there can be no doubt but that it must be highly injurious to them, if not before.

Sir Henry Steuart thinks that the lower stratum under the trenched part is of great importance to the well-doing of trees; and that if it was of a light gravelly texture, it would be the best for letting the water percolate through it. The quality of this stratum is no doubt very material, but it may be a question, whether so much so as he supposes, for the reasons already assigned. If the water is carried off on the surface by the artificial fall given to it in the formation of the land, it should never reach the lower range. The quality of this stratum is perhaps of more

consequence, as affording strength and support to the trees, when they become the ornaments of the country in size and beauty. A great observer of nature, and the most beautiful delineator of it of antiquity, has said of the oak :—

Qui quantùm vertice ad auras
Ætherias, tantùm radice in Tartara tendit.

“ Far as he shoots his tow’ring head on high,
So deep in earth his fix’d foundations lie.”

It may not be here out of place to make one remark on the quotation given. Virgil uses precisely the same words, in two different parts of his works, in speaking of two trees of an entirely opposite nature; the oak and the beech. The latter we know spreads its roots horizontally, which running on the surface exhaust every thing that comes within their reach. The oak on the contrary sends its top-root directly downwards; but it is ascertained that after a certain time this loses its pre-eminence, and disappears amongst the other roots. From this it would appear either that a large licence must be allowed for poetical exaggeration, or that Virgil meant rather to describe the corresponding resemblance that existed generally betwixt the roots and the branches in size and extension, than that the root descended as deep under the ground as the tree rose above it. Single trees that are the most exposed have the largest roots. These also divide themselves at the top into the most numerous branches. Thus they are covered more thickly with leaves to protect them from the severity of the weather. From the peculiar tendency of the roots of the oak

downwards, we may believe that this glorious tree derives much of its sustenance deep in the earth. A rich marl, such as lies generally under all the top-soils in this country, may be highly favourable to its growth and luxuriance, and may be one cause of oaks flourishing so much more on what are called stiff clays than on other soils. But then these must be laid dry, or else they are the worst that can be planted. If this is not done, the trees become stunted, hide-bound, and with their bark all covered with moss. The bark of an oak tree, when young, should be smooth and clean, and at all ages should be quite free from moss.

Another method of preparing land for planting is, by growing a crop of potatoes previously. This no doubt is stirring the land thoroughly, and enriching it at the same time; but if it has to be done on a large scale, it may be a consideration whether when wheat or some other crop can be grown in its place of considerable value, the return will justify the expence. If a quick and large rush of wood is wanted, it may certainly be the means of obtaining it. In ornamental plantations, or in screens about a house, where shelter and effect are the objects proposed, this mode may be properly resorted to, and the result arising from it will be found fully to answer the expectations formed. Two letters appeared a few years ago addressed by Mr. Withers of Norfolk to Sir Walter Scott. These are written with much cleverness, but in rather an arrogant tone. In them he shows most satisfactorily, that the Scotch system of putting in trees by the slit

or by pitting, is a waste of time, labour, and expence. That in that way a great part of the trees die; in pitting they are either killed by wet settling at the roots in winter, or by drought in summer; that if they do escape immediate or early destruction, they remain for several years in almost a lifeless state from being choked with grass and all sorts of rubbish; and even then they make no figure for years to come from want of a friable soil for the roots to shoot in. He then recommends trenching the land either with a spade or with the plough, manuring it, but without growing a green crop, and then hoeing it for four or five years. All these seem admirable methods for forcing an early growth, and no doubt great as the expence would be attending it, yet this in the end would be likely to be fully repaid. The hoeing and manuring the land appear quite new, and would probably have an excellent effect.

With every disposition to give credit to the spirit and ingenuity with which Mr. Withers has avowed and supported his system, there is reason to doubt the correctness of his conclusions, when he states the difference of profit in a plantation of sixty-four years planting as calculated at £1181 14*s.* 6*d.* in his own way to £95 11*s.* in the Scotch way: and he further appears to have misunderstood Sir Walter Scott's meaning, when he says, that as far as he has observed, the difference betwixt the growth of plantations, when the ground has been prepared or otherwise, seems to disappear within the first ten or twelve years, meaning

that after that period, they will both make equal progress, not that one will arrive at the same size as the other within a given time. An instance might be produced of a trial having been made of the Scotch system by putting the trees in on grass land by pitting. For the first five or six years their progress was extremely slow, but after that time they came on not in any way inferior to those on prepared land.

When the roots have acquired sufficient strength to draw their nourishment from ground that has not been stirred, they may perhaps derive more benefit from the fresh soil underneath, than if that had been brought to the top. When the land is extremely poor, and has been worn out by successive cropping, it can never answer to plant without frequent and deep ploughing or trenching, and perhaps with the help of manure; but though the advantages of this previous preparation are great under any circumstances, and it is perhaps after all in the end the cheapest and best, yet it would be unfair to infer that its superiority will continue the same after the trees are got to a large size; which it may be fairly asserted is not the case, though there may be a probability of the reverse, from the reason already assigned, of their reaching in time the worn out soil. Without any intention therefore of detracting from the merits of a system, which has so much to recommend it, it is only fair to put the advantages, which may be derived from it in a fair light, as the advocates of a favourite theory are frequently not content with the results, which reason

and experience justify, but are anxious to ground on them conclusions, which have place only in their own imaginations, and too sanguine expectations.

Another ingenious method of planting has been practised with success ; and, in case the work is to be carried on upon a large scale, it is likely to answer from its being a vast saving of expence, and very effectually succeeding in stirring the land and keeping it clean.

The whole is almost entirely done by the plough. The ground should be first trench ploughed very deep in Autumn, and laid up in a rough state to receive the amelioration of the winter frosts.

When these have acted properly upon the large clods, a good stirring by the plough and harrow will reduce them into a fine pulverised state, ready to apply all their fertilizing properties to the nourishment of the tender roots of the plants. After the land is got quite fine, it should be laid up into butts of eight yards in width. The planting may then be begun by a furrow being made in the usual way much after the mode of planting potatoes in drills. Into this furrow are put the trees, and their roots are covered by another turn of the plough, filling up the furrow. If the land is poor and an early rush of wood is desired, manure may be laid in the furrow, and the roots of the trees may be put immediately upon it. A man then goes along the furrow that is planted,

lifting up the tops of the trees and putting them upright, treading down at the same time the soil gently upon the roots. The plough goes on turning over the whole of the land; and when the furrow is come to, which is at a proper distance for another row of trees, the same process is to be pursued as the preceding one, and the whole is thus completed at a very trifling labour and expence when compared with the usual method of planting. If the ground be in the condition required and every thing is properly arranged previously, a plough with a man and a boy besides the team would accomplish two acres a day. If manure is used, this would take no more time, but an additional man to put the dung from the cart into the furrows.

In addition to the great advantage from proper preparation of the soil, the utility of which cannot in the least be questioned, the ground does not get trodden down in this as in the common way of planting. But what is still further of the greatest use is, that the land may be kept afterwards perfectly clean for two or three years; with some little hand-hoeing betwixt the trees, by the plough going between the rows, and turning the earth backwards and forwards the same as in cleaning potatoes. This saves the expensive process recommended by Mr. Withers of hand-hoeing the land three or four times in a season; of which it may be doubted, whether the profit will repay the cost. It is to be considered that the trees for the first few years draw all their nourishment from the

soil lying close to their roots. If therefore they are planted at five feet apart, the comparison will not hold good betwixt them and a crop of turnips, as Mr. Withers has endeavoured to establish.

But the plough does its work better as well as cheaper than the hoe. It penetrates deeper, and this helps to keep out the drought, it makes the land more friable, and it gets to the roots of the weeds, whereas the hoeing often only cuts the thistles into two, by which they come up again stronger than before. In land that has been prepared it is certainly most material to have it kept clean afterwards, otherwise the thistles and weeds are so forced, that if left to themselves or to run to seed, they will fill the whole adjoining land with rubbish.

After the land has been kept two or three years clean, the underwood may then be put in betwixt the rows; and a trench may be made with the spade betwixt each but, the soil from it being thrown upon the but, so as to round it properly up in the inside.

To the method here described some deserving perhaps the name more of sportsmen than planters may object, because of the delay that is occasioned of two or three years in its providing a cover for game. But let it be considered whether it is not better to make a present and temporary sacrifice, rather than attempt a premature display, which must ultimately fail in its object to a certain extent, both as far as pleasure and

profit are concerned. Others who regard fanciful appearances of beauty, more than what is intrinsically useful, may dislike the formality of trees in rows, but let these look forward to the proper period when a plantation can be said to have arrived at a fair maturity, and they will find that if they have attended to the gradual thinning out of the nurses, and to leaving the oaks and other principals at their respective distances, such as they ought to be, both for affording the largest increase of timber, and displaying to advantage the proper formation of their heads and branches, the formality of the rows will by that time have disappeared, and the general view will be broken to the eye by a happy mixture of the different sorts relieving one another at uncertain distances.

There is therefore every reason to think, whether we judge from theory or the trial that has hitherto been made of it, that this new method of planting is likely to be of the greatest use ; and to form an interesting and valuable improvement on the old system, particularly on that of putting in trees by what is called pitting on grass land. Where the planting is carried on upon a large scale the operation here detailed is more easy and expeditious, than where the space is more confined, from the plough not having to turn so frequently. This seems to make it highly deserving of the attention of the First Commissioner of Woods and Forests. In many of the large plantations made by government, the young trees are dibbled into the land in its unreclaimed state, without draining,

without preparation of the soil, and without attention being paid to them after being planted. There are certainly many mountainous and other districts of rough and rocky ground, where the plough could not act, but there is no ground so wet or boggy, where this can be the case, which ought to be planted in that state. Main drains should first carry off the springs and the superfluous surface water ; then the land being laid into butts with good deep trenches betwixt each, and these kept clean for the first few years, the trees will have every prospect of making an early growth and doing well afterwards.

The different methods of preparing land having been now enumerated and explained, the inference to be drawn from what has been said appears to be, that the trenching system in most cases has a decided superiority over the others. When we see such scientific and practical men as Sir Henry Steuart, and Mr. Cobbett strong advocates for it, we cannot doubt its merits. The only thing they seem to have left short, it is intended by this work to supply, laying the land into butts in order to carry off the water more effectually. By the formation of the butts and the deep stirring of the ground, an early growth of the trees is forced ; and for ordinary purposes and not too extensive a range, the advantages of it are well worth all it will cost. If it be only a small plot of ground intended for ornamental plantations, then the plan suggested by Mr. Withers of digging and manuring, and then keeping the ground hoed for some years after-

wards, may have much to recommend it. If however the planting be to be done upon a large scale, such as a quantity of perhaps poor waste land or a forest, then the expence of the former method might be too large, and it might be worth the trial, whether the planting and keeping clean with the plough might not be most serviceable. It would have the benefit of Mr. Wither's hoeing plan, but done with less expence and probably with quite as much effect.

The best time for trenching is before Christmas. The soil then gets meliorated by the winter frosts, and will afterwards fall as fine as garden mould. Mr. Cobbett recommends trenching immediately previous to planting, as the plants will then have the benefit of the fermentation that is carried on by stirring the ground. Much must depend upon the nature of the soil. If it be a strong one, there would be a danger of its being too cloddy, and adhesive to the spade. When in this state it would be folly to come upon the land. After the frost has got properly hold of it, and the top clods get still further mellowed by some of the searching March winds, a light harrow should be drawn over it by two men, not by a horse which would tread it too deep. It will then be in the finest order possible ; and when the holes are made for the young plants to be placed in, the loose small mould may be dribbled amongst the fibres, and then gently pressed down by the foot. Supposing it was in a contrary or sticky state, it would get consolidated to such a cement as would entirely

prevent the roots mingling with the soil in their early stage.

The distance at which the trees should be planted is five feet asunder. If they be further apart than this, they would want that shelter and protection which they naturally give to each other by their standing moderately close; and they would not receive the aid which the nurses of quicker growth than the others are intended to afford. On the other hand, there is not a greater mistake than in planting too thick. If for instance they are planted three feet apart, they are drawn up, without side branches, without room for the top to expand, without any of the symmetry or proper proportion of the parts. No doubt when they are prevented throwing out their strength in thickness of stem or in lateral branches, the top is unnaturally propelled into the leading shoot. They then acquire a height which they have not strength to maintain, and are at the mercy of all the winds of heaven.

In planting it is material not to put in the trees indiscriminately or as they may happen to come to the hands of a careless gardener; but to mix the different sorts together in such a judicious manner that the ultimate objects of all planting may be best accomplished. It is important to consider the quality of the soil, and likewise to observe what peculiar trees appear to be most indigenous to it. In many of our midland counties, elm seems the natural production

of the country. It may still remain to be proved whether by cultivation some sorts more valuable as timber may not be raised. Paying due attention, but not a blind deference to this characteristic, the planter must consider what is likely to bring the largest profit at a distant period or within a given time, regard being also had to covers for game.

The proportion in which the different sorts should be mixed is this ; one oak, one Scotch fir, two larches, two willows, with a few spruce firs scattered about in parts. It is also of great advantage to have a clump of spruce firs entirely by themselves or with only such trees as may serve as nurses mixed with them. If these are Scotch firs or larches they may be weeded out when the sides begin to touch each other. This plan is even better than planting firs singly. There is nothing that pheasants are so fond of as a clump of this kind. It guards them against bad weather by day, and poachers by night. It has nearly the same warmth as a house, and perhaps as much as many an Irish cabin without either windows or doors. In a snow every pheasant will resort there for shelter ; and when they have been much driven about in a cover from shooting, they will often seek this as their last place of refuge.

The intention of mixing the trees in the manner mentioned is that the principals should have the sheltering aid of the nurses in their early stage ; and that the latter may be then removed when they are

no longer wanted, and at an age when some use may be made of them. If the trees were planted three feet apart, either they will spoil each other, or kill the underwood, or they must be cut down, before they can be of any use.

After the holes have been made, not at random, but the distance measured by a stick five feet in length, the oaks, the principals, must be put in first. These should as much as possible be placed on the higher part of the bed, where they will have the greatest depth of soil. All the others are only auxiliaries to these, and will have to be weeded out at their respective periods. But those that have to be removed first should be planted nearest the oak.

The work of planting itself is not so easy a matter as some may suppose who leave it to be done in a hasty manner. It is easy enough to cover up the roots with soil ; but it is not so easy to cover them up in such a manner as to cause the roots to be so disposed and mingled with the earth, as if they were growing naturally. The roots should be first run through, and the loose straggling fibres, that want curtailing, should be taken off quite clean, and not jagged, with a sharp knife. It is to be recollected, if they are not taken off in this way the ends will suffer and decay the parts higher up. Caution must be used in not shortening the root more than is necessary, as all nutriment is conveyed through it, and the larger this is, the faster the tree will grow.

If any branch does not accord with the symmetry of the other parts, it should be removed quite close to the stem. In planting, the same man should not both hold and cover up. A boy should take hold just above the part that is to be put into the ground. Great care should be taken that he spreads out all the small fibres to draw proper nourishment to the plants. After some of the finer mould has been put in, he should move the tree up and down that the soil may get properly mixed with the roots. An easy pressure of the foot will then give firmness ; but even at the top the ground should not be trodden down too hard, as in that case it would obstruct the play and action of the radical vessels, and also prevent the admission of moisture.

A difference of opinion exists, whether it is better to plant trees together all of one sort, or to plant them varied and mixed. Mr. Cobbett says (par. 85), "In all cases where plantations are made for the purposes of producing timber or underwood, all the trees ought to be of one and the same sort ; and, as nearly as possible, of one and the same size and height. Besides the shade arising from the inequality in the growth of trees there is the inequality in the portion of food. The roots of the aspiring tree would rob those of the other trees ; and though it might not exactly extend its branches over the top of them, there would be the side shade, and all the injuries arising therefrom." We certainly see in a plantation where the thinning system has been neglected, that

the quick growing trees so overtop those of a contrary tendency as to entirely stunt them, and prevent their carrying up either their proper strength or height. This may be considered more particularly the case with the oak, which for a certain time after planting rises slow and weak ; and during that time if it gets under the shade and drip of another tree, it never at any period will make any figure ; it loses all its side branches ; and puts out nothing but small shoots ; and its stem can scarcely support its own weight. But it may be asked, does not all this arise from want of proper management on the part of the owner ? No tree should ever be allowed to whip another ; that is, to rise so much higher, that by the shaking from the wind it will be constantly beating both the top and sides of the leading branch of the adjoining tree. When it comes to this, it is time that one of the two should be removed ; and if the offender be a willow or a larch, he should have been dismissed from his superior elevation long ago.

It is to be considered that profit is the first object to look to from planting, and the bringing a quick return. The condition and quality of the trees that are to remain at a more distant period is also matter for consideration. If profit was the only object, nothing would pay better than the willow. Three common willows of about thirty-five years' growth, in the time of the high price of timber, were known to fetch about £18. This could not be done by any other sort of wood. The larch would perhaps come

nearest to it. The misfortune is that both these quick growers have the appearance of nakedness and poverty in a plantation; and under the latter no underwood will grow. In other respects they are highly worth cultivation, as they make excellent timber for sale; the willow being used for the sides of carts, and the other coming next to the oak for every purpose that either the builder or the wheelwright may require.

If profit be the principal object to be attended to, let a plantation be made entirely of oaks, and it will be found that the thinnings from this will not come into use under ten or twelve years. The willow for the purposes of railing will be of value in half that time. It remains to be seen whether the injury done, from having the trees mixed, is so great as has been stated. On the contrary may it not be imagined that great good is derived from it. Oaks certainly when young require warmth and shelter. Nothing affords this so effectually as the Scotch fir. On Delamere forest these two sorts are almost entirely planted together. The firs help to draw up the oaks straighter, and to give greater length of stem than they would otherwise obtain. If therefore these nurses are removed before they become injurious, they will have served the purpose for which they were intended much better than if those of a slower growth had been planted, and more profit will accrue from them.

As to certain trees robbing others of their proper

portion of food, there is no doubt much truth in it. But should trees of this description be eventually allowed to stand in a plantation? The beech and the ash are both most injurious standard trees, as affecting others within their reach. Nothing will grow under or near a beech. It sends out its roots so laterally, and to such a distance, that it soon exhausts every atom of nutriment which the ground contains. But is it profitable in any shape to encourage such a tree? Nothing can be more ornamental than its wide-spreading branches are as a single tree; nothing can sound more poetically Arcadian than to repose under their shade in an Italian sky; but as a wood for price it is of an inferior kind. The cabinet-makers will be glad to buy it when of large dimensions; but when small it will fetch scarcely anything. Even when large it will fall far short of many other sorts. Without naming the oak, the sycamore beats it far. This is used in machinery, and when of great size and with a straight boll, it has been known to fetch an enormous price. This however has latterly much fallen from cast-iron having been in some cases substituted for it. The uses of the ash are undeniable. There is scarcely a thing wanted in the wheelwright's or carpenter's shop but what the ash comes into requisition. There is no wood perhaps, which on the whole, pays better. It is always of ready sale, and being so much quicker in growth than the oak, it brings a better return. If, however, this is to be grown, the opinion of Mr. Cobbett is entitled to much weight, that it should be

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Castle Hill



Sharp's the Word. quick the Motion

grown by itself, or else it will be sure to injure the other trees. As a cover, the two sorts, the ash and the beech, are both objectionable from their killing in a few years the underwood beneath them. The oak in this respect is infinitely preferable, as from its having a taproot, and sending that downwards, the underwood will thrive under it better than under any other tree.

A willow bed, attached to a plantation, is good as a cover for all sorts of game, and is profitable from the quick and certain return which it will bring. The preparation of the land is the same as for other trees, laying it into butts, and trenching it. The soil that suits it best is one that is tolerably stiff and retentive, and at the same time moist. It is an advantage if a situation can be met with that is liable to be flooded; or where water can be turned upon it by artificial means; but this is not absolutely necessary to its productiveness. Light soils give a much inferior crop; and raw moss, even when prepared, entirely fails. If light soils are planted at all, clay should be got out of the gutters, and thrown upon the beds. After it has fallen by the frost, it should be spread over them, and then the whole should be dug over and the clay turned underneath.

The distance at which the cuttings should be set is in rows across the beds, two feet apart, the cuttings being eighteen inches from each other. It is better that they should not be cut the first year unless they

have been bitten by game, and in that case, one shoot, if entire, should be left. The cuttings would then be of little value, and another year's growth would give them strength. The second year's cuttings will be valuable, and they will be improving for some years to come. In about fourteen years they will begin to fall off, and their roots to decay; but they will last longer, perhaps about twenty years, if they are not cut every third or fourth year. The profit will not be the less, as the two years' crop will produce an equal weight as if cut each year, and they are full as saleable for wiskets of a heavier sort, and hampers for fishermen, of which there is a large demand at the Isle of Man.

Willows are always ready sale in any large market town. The price when delivered on the spot is commonly about four pounds a ton. From two to three tons an acre may be considered a fair average crop, when they are at their best. This is without their having had any peculiar advantage either by being kept clean or flooded. When this is done, they will far exceed that. It has been said that some on the banks of the river Trent near Newark, have fetched as high as fifteen pounds per acre.

Hares and rabbits are extremely partial to a willow bed. Pheasants like one as affording shelter, but it is necessary that there should be a plantation close at hand, for them to perch in. A willow bed makes a beautiful shooting cover, when not too thick nor too

high. Then the game, if not prevented by stoppers, will run to the end and be found in the plantation. It is also very good for pheasants and partridges to breed in. After it has been cut down the grass springs early and affords a good succour. It may also be kept perfectly quiet, and there is not the same danger of accidents as from breeding in the open.

There are two kinds of planting in particular situations which require notice from the prevailing opinions respecting them. These two are planting on a moss, and planting on the sea-coast. It is generally believed either that trees will not grow at all in either of these places, or only those of a particular kind. Both these opinions may be disputed. In the former, if any tree at all has to be planted, it has been the invariable custom that it should be confined to the Scotch fir. It follows from this that when a residence has happened to be placed in the midst of morasses, and it was required to break the monotony of it by a variety of light and shade, nothing was to be seen far and wide but these sombre masses "blotting the fair horizon." They are the most noxious weeds that can be grown either for profit or in the end for covers for game, and therefore if it be possible, they should be extirpated, and something of a more enlivening and varied character should be raised in their place.

The want of success in planting on mosses has

arisen from the manner in which the work has been done. A moss is perhaps selected with strong heath a foot or more high. Deep ditches are cut in it for the purpose of laying it dry, the soil being thrown on the sides of the drains. The plants are then frequently put in by the slit, and left to themselves. Some consequently die, others having struggled hard for some years against their unlucky fate, begin at last to make a start, and to show themselves above the ling. They then go on increasing, and varying in degree according as they are situated for dryness. It has been already observed that where the soil thrown from the drains remains on the sides, the part within gets dished; and the wet then stagnates. It is impossible that any thing can flourish under such circumstances, though a Scotch fir may stand it best. The only trees that appear to do at all really well are some of those that have been planted on the soil thrown out. A particular instance has been noticed, where an oak happened to be placed in this situation. It prospered quite as well as any of its wretched attendants, many of whom looked like so many chief mourners ready to attend on the obsequies of their dying companions.

The theory of mosses is now well understood; and as it is necessary to establish first principles before any sound system of improvement can be proceeded in with effect, by way of elucidating the subject it may be of use to make an extract from a valuable work "On Peat Moss," by Andrew Steele, Esq.

He says (p. 21) "My theory of mosses is simply this—peat moss must have been originally stagnant pools of water, which in most cases, if left undisturbed, will be filled up with decayed vegetable matter. Moisture and cold I deem to be always essential to the formation of peat. Moss plants (*musci*) the production of cold and moist situations are generally, if not always, the constituent parts of peat. Fallen wood I conceive to be favourable, but not absolutely requisite for the acervation of the petty substances in bogs, because I have seen mosses on which no trees could be discerned."

In the same work Mr. Roscoe gives an account of his improvements on Chat Moss, and states—"Chat Moss is an aggregate of vegetable matter disorganized and inert, but preserved by certain causes from putrefaction. On the surface it is light and fibrous, but becomes more solid as we penetrate into it. On cutting to a considerable depth, we find it black, compact, and heavy, and in many respects resembling coal."

That water in a state of stagnation and in a certain temperature of air is favourable to the formation of peat is certain. But the immediate cause of the creation of peat moss appears to be the plant called *sphagnum palustre*, or broad-leaved bog moss, without which, I am inclined to believe, not a single instance of this kind of land would exist. The height to which this plant grows varies from an inch to three or four

feet, according to its situation. It is only of annual growth, but as the seeds fall they vegetate again in the ruins of their predecessors, if indeed they require any other nutriment than the water in which they are mostly found.

Camden mentions, that in this place (Chat Moss) there lies a valley watered by a small river (probably the stream called Boiling Brook, which flows into the Irwell, near Foxhill) and here trees have been discovered lying flat on the ground, so that one would think that when the earth lay unhusbanded, the ditches also unscoured, in those low plains, and either by neglect or depopulation, the water passages were stopped up : those grounds that lay lower than the rest were converted into such boggy mosses, as we call them, or else into standing pools. If this be true, there is no reason to admire that so many trees in places of this nature throughout England, but particularly in this county, should lie overwhelmed and as it were buried in the ground ; for when the roots of them were loosened by reason of the too great moisture of the earth, it was impossible but they should fall, and so sink, and be drowned in such a soil. There is sufficient evidence that at some former period this tract of land exhibited a very different appearance. It is certain that a part of the moss was at one time imparked by the name of Barton Park. During the present improvements the ancient oak palings have been found underground in cutting the drains of the moss in an almost regular series ;

besides which the boundaries of the park are indicated by a mound, which may yet be traced, which comprehends a tract of about four hundred acres. In the map of Lancashire, by Robert Morden, in Camden's *Britannia*, the impalement and enclosure of Barton Park are shown the same as those of Knowsley, Latham, and many others.

The origin of mosses being thus accounted for as proceeding from decayed vegetables under a cold temperature, and the renewed growth of aquatic plants, generated from their own seed and vegetating only in standing water, it necessarily follows, that the cause must be removed before further increase can be prevented, or before it can be rendered available to the purposes of agriculture or planting. All vegetables and trees, but particularly the oak, possess much of the tanin principle. It is by the extraction of this through the removal of the water that supports it, that a new composition must be going on. By this means the astringent aquatic vegetables growing on the surface and supplied with fresh tanin being partly destroyed, the antiseptic nature of the bog, at least on the surface of it, is gradually overcome.

The materials of which the body of a moss is composed are of the richest kind. Every sort of vegetable matter in a state of putrefaction is capable of being converted into the best of manures ; it only here loses its value from the neglect to which it has

been abandoned. In the same manner manures derive their strength and efficacy through the means of fermentation ; and this is neutralized and destroyed, when the substance is saturated with wet.

To lay the land therefore perfectly dry and to expose the component parts to the fertilizing properties of the air, is the first step towards planting on a moss with success. A similar method of preparation may be pursued as has been already recommended ; deep trenching to not less than twenty-four inches, and throwing the soil from the gutters on the top of the beds. The gutters should be not less than two feet deep. The work should be done very early in autumn ; or it would be still better if the ground could lie in this state for two or three years before planting. The consolidation of a moss goes on so quick after the water has been drawn from it, that in the time named it has been found to bear a plough with horses. The quality of the soil too has got so changed, that it has been known to produce a crop of grass without the aid of manure.

The quality of the soil being thus changed, and converted from a crude raw substance into a rich mellow loam, trees of the greatest variety and of the most delicate and valuable sorts will be found to thrive in it. The oak at the first planting will put forth vigorous shoots. Larches will do as well in it as in most other soils, or better than in that which has been worked out. It is good for the black

Italian poplar, but not so much so for the willow. The longer the trees continue, the better they are likely to prosper, not only from the gradual improvement that is going on in the moss itself from its getting more dry and firm, but from the roots shooting down into a soil of better quality. If you cut down deep into a moss, you find its colour change, and become more dark and almost black. This is of an infinitely richer sort than that of a lighter colour and more fibrous texture which is at the top.

If this method of planting on a raw moss be adopted, you may have land which for centuries has lain barren and useless, and which has thrown a dark and hideous appearance over the whole country around, suddenly rise to a new life and utility without any outlay but what a few years will repay. Underwood of every kind may be cultivated on a moss to advantage, but particularly the hazel, which flourishes in it most luxuriantly. It is known that there are some sorts of evergreens, such as rhododendrum and the American kinds, that do particularly well in bog soils. Box and privet will prosper, and brambles are almost indigenous in it.

In planting moss land rather than letting it lie idle, it should at the same time be observed, that a plan has of late years been practised with success of applying it to agricultural purposes, and of improving it on the top without the upper part being first removed, as was formerly done. The outlay in doing

this has hitherto been generally considered so large, and the process so difficult, that few proprietors have attempted it. But in the experiments that have been made, particularly in those in the vicinity of large towns, where there has been a facility of procuring dung at a cheap rate, especially black dung, it has now been found that an ample return has been produced. After the first expenses have been incurred, chiefly those of draining and marling, there is no reason why this should not be made equally good as any other land.

There is also another use to which mosses may be applied, that of supplying an article of fuel. Much of the profit proceeding from this must depend of course upon situation. If it be in a populous part, or near a large town, it becomes very valuable. What is called a turbary is generally let off at so much a fall or rod. This varies according to circumstances, from 3s. to 7s. or 8s. a rod. In Ireland it is infinitely of more value from there being no coals there, or only in parts and of a bad quality. The mosses there are much deeper than ours. They have been known to let in the county of Tipperary at 24s. the rod. After the upper part has been pared off, that below makes very good land, and will often let for an enormous price for potato ground.

With regard to trees upon the sea-coast, the utter nakedness and destitution of them on the Blackpool coast fully establish the fact of the inadequacy of

natural means to counteract the saline particles injurious to vegetation, and the need of some artificial stimulants or correctives to succeed in the attempt. It is clear it is not the general atmosphere that does the mischief, but only the salt conveyed through the air by the west wind, prevailing more than any other throughout the year on this coast. If any protection is afforded, if a tree be in a sheltered spot, with some high ground rising betwixt it and the sea, the air then in no way affects its growth. On the contrary no situation whatever is so favourable to its growth as this is. The salt possesses amongst its properties that of diffusing into the atmosphere a peculiar degree of softness and warmth; which may be seen from snow seldom lying long near the sea. It is through this medium that all trees are benefitted, if they can escape the effects of the direct passage of the saline current through the air. Plants of the most delicate kind, even myrtles, which under other circumstances would shrink and perish, here bear the winter's cold almost without protection or being covered.

From the foregoing statement it is apparent that the first and only step necessary to overcome the difficulties alluded to, is to raise trees on the west side that will be a succour to those more distant, which will be thus secure under their shelter. This must be effected by a quick growth, and a proper selection of those that are to be most exposed. The first thing is to make a good bank four or five feet

high, with a ditch on each side to serve as a fence and a partial aid. It must be made wide enough for three or four rows of white thorns, to be planted upon it, which must be kept perfectly clean for three or four years. Good land for the plantation should be selected. This may be prepared in the same manner as has been already explained; but in addition to that, the ground for about thirty or forty yards from the outer side may be manured and kept dug for a few years after Mr. Withers' plan. The proper selection of trees is most important. From want of proper attention to this, perhaps as much as anything, so many instances of failure may be attributed. There is nothing so good for rising quick and straight as the willow; but then particular care is to be taken that it be of the proper sort, as there are so many different kinds of them. The best is what is called the Dutch willow, which is of a light colour both as to its leaf and bark. As a standard tree the sycamore is far superior to any other for standing the sea air. It spreads out its branches well and strong; and throws out a broad leaf, that offers a thick screen for all behind it. The next in excellence is the elm. The Scotch elm is the best both in hardiness and value as timber. These three sorts should be alone planted for some distance on the outer side. It will be seen that they will rise gradually from the part facing the sea breeze from the west like the roof of a house, but by the time they have reached no great distance from the exterior part, they will have got the height they would have done had they been in

any other situation. All within these are safe. Trees of any kind may then be planted.

The effect of judicious planting is strongly exemplified in the tracts adjoining the Bristol channel. There blackthorn is planted on the outside, which leans from the west; then trees of different kinds. These at first are much cut to pieces, but they keep gradually rising, till they at last afford shelter behind them for some of the straightest and most wide-spreading timber trees of any in the kingdom. The soil is good, which is material, a rich marshy loam. At King's Weston the woods are beautiful, without the least appearance of being affected by the sea salt. In some parts there some high land intervenes between.

In planting near the sea-coast it is usual in many cases to put the trees very near together, but it may be questioned whether this is not rather injurious than otherwise. It draws them up too much, and consequently weakens them so that they do not carry up their strength in proportion to their height. It also makes it necessary to thin soon and largely. This is bad for the tender plants, as it is much better to bring them up gradually inured to the climate in which they are to remain, than to starve them and thus impede their growth by too sudden a change.

Every thing that comes from Sir Henry Steuart must have a weight bordering on conviction: yet it

may be doubted whether his opinion respecting the inequality in the shape of trees is borne out by facts. He states (p. 136) "that most trees are unequally balanced, and show what is called a weather side, usually to the west and south west in this island, from which side they seem to bend, and exhibit in consequence a very unseemly appearance. For wherever the action of the air is the greatest, there the greatest evolution of buds, and the thickest growth of spray, will take place ; but these growths are shorter and feebler in proportion as they are more numerous."

"Again, (p. 133), as the exposure is increased we invariably perceive, that both branches and roots multiply. Towards the quarter most exposed the branches are always more contracted in their growth, but in general more thickly set with spray ; plainly for the purpose of furnishing a close cover of leaves for the protection of the sap and vessels, as they lie immediately under the bark. This, however, is by no means inconsistent with the fact that a more active vegetation is generally carried on, on the warmer than the colder side of trees, and a greater deposition of nutritious matter consequently made in the former : because by far the largest and longest branches are always found on the warmer side, though more thinly disposed over it ; and they prove the superior activity of vegetation there ; while the shorter but weaker and more crowded style of ramification on the colder side shows, in like manner, its inferior activity. Nevertheless, the clothing of leaves is in this way

usually thicker for the wise purpose of defence from cold on the side last-mentioned."

This theory is an ingenious solution of the system pursued by nature to accommodate its productions to outward circumstances, and to give them the means of restoration under injuries received, but it appears to be chiefly, if not entirely, applicable to trees planted in maritime situations. If we travel through the midland counties in this kingdom, we see straight trees rising high with wide-spreading tops, these equally balanced, and without the appearance of a weather side. The west wind is equally the prevailing one throughout the year in those districts, and therefore ought to have an equally pernicious effect. It may therefore be considered not to arise so much from a prevailing wind, as from the wind containing in its current ingredients of a noxious quality. The tender shoots that are exposed to it are either nipped off in the bud, or checked in their expansion and growth; and the tree instead of throwing out a vigorous branch in the teeth of a pestilential atmosphere, divides its strength into more numerous offsets, but these of a weaker kind. This is evident from a tree planted in such a situation behind a wall. It keeps its upright posture until it overtops its protector: the moment it lifts its head above that, it is either entirely cut off, or it makes a retreat from the enemy almost at a right angle. There are certain trees, particularly the oak and larch, which even when so exposed are not so much impeded in the

growth of their stem, as affected in their top. They expand themselves then, like the yew trees in an old pleasure-garden, that one sometimes sees cut into the form of a peacock with a spreading tail. It certainly detracts much from the beauty of our woodland scenery in this county, and still more from our single trees, that they want that symmetry and due proportion, which so distinguishes more inland spots. Sir Henry Steuart mentions an instance of an improver planting a dead tree, by way of a picturesque effect; but after all much of this must depend upon circumstances, even if we allow such a paltry artifice to reach a natural resemblance. If the scenery is of the wild or forest kind, with bold and abrupt features, the stag-headed oak, or even almost a lifeless one, may suit the character of the place; it will not offend the "genius loci." But if it be of a tamer kind; if the place be more ornamented with highly dressed grounds, every thing should be in unison to enrich and adorn; all things should be glowing with health and luxuriance to throw around them the charm of softness from easy transitions and a regular disposition of the parts. A tree with its huge dead limbs, or with a branch thrown out only on one side, would be entirely out of place; it would be not only an eyesore, but an actual deformity. Unlike the sailor with one arm who would be entitled to Greenwich, it would be rather fit for a place in Westminster Abbey.

Nothing adds so much to the beauty of a country as to be well covered with wood. Fine straight growing

trees are of themselves beautiful objects. They set off to greater advantage a varied surface, they can make even a dead flat appear pleasing and attractive. But it is not only in a picturesque point of view that they are of use ; it is also in an agricultural one. The warmth and shelter they afford are such, that an almost new climate is created by them. Vegetation is assisted and forwarded. Cattle seek to repose under their branches ; and all farming stock thrive so much the better for their fostering aid. In maritime situations, particularly those lying exposed to the noxious currents of the western blasts, the want of timber has a naked and often hideous appearance. The evil too goes on increasing, unless a remedy be applied by artificial means ; unless the labours of the planter supply either what has been denied by nature, perished by decay, or been destroyed by art.

It is a very probable conjecture, that the greater part of the earth, when it came forth from the hands of the Creator, was formed in a fit state to become covered with wood from indigenous fecundity. There appears to be contained in all soils the seeds of vegetation, which by spontaneous efforts burst forth into abundance, suited to the wants of man. These productions may have undergone variation either from the operations of human means, or from some of those revolutions of which there are such evident traces on the face of the globe. The changes which have taken place in it, both on its surface and underneath, are much beyond the scope of our comprehension. Ge-

ologists may pride themselves on having made many true or at least plausible discoveries. They may lay claim to many more, yet there are many appearances which are quite beyond their reach. Amongst these the formation of the different stratas of earth is one not the least perplexing. Fields of coal, lying many hundred feet underground, with marks of imbedded trees in them, shell-marl composed of marine fossils, each frequently covered with numerous other stratas, until the one fit for cultivation is arrived at, are amongst the curious and inexplicable phenomena of natural geology.

If then there are different parts of the universe that are hidden, as sublime mysteries, from mortal ken, that serve to expose the limited faculties of man, and to show in what an abyss of ignorance he is plunged, it may perhaps be the best way of overcoming an insurmountable difficulty by attributing these extraordinary appearances to original contrivance. An eminent divine* has said, that "we are not required to deny the supposition, that the matter without form and void, out of which this globe of earth was framed, may have consisted of the wrecks and relics of more ancient worlds created and destroyed by the same Almighty Power which called our world into existence." There is certainly much in the construction of the world which rather bears the mark of a beneficent Creator preparing all things in the beginning for the use and enjoyment of his

* The Bishop of London in his sermon on the Deluge.

creatures, than that it had attained its more perfect state from fortuitous circumstances. There may have been convulsions of the earth operating powerfully; the great deluge, or, as some suppose, a succession of deluges, may have effected changes on its surface; yet none of these causes will sufficiently account for the great regularity belonging to some of the operations of nature. In what way can it be explained that, throughout the whole habitable globe, nearly an equal layer of soil, fit for cultivation, should be placed as a covering over the inert and intractable mass of matter that lies underneath it. We find this varying in no great degree in goodness in different countries, in no instances entirely deficient, crowning the mountain top with its richness, and fertilizing the valley at its foot. Effects like these can be produced by no action of water; no deposit from such an unknown and hidden source can have operated so uniformly and beneficially for the good of all living creatures. When difficulties like these are presented to our view, it seems an absurdity, bordering on presumption, to advance an hypothesis, which, however speciously supported, may violate the fundamental laws upon which organic matter is formed; or broach, as an incontrovertible axiom, what at best can only be a probable conjecture, ending in an unsatisfactory conclusion.

Yet there is one of these stratas whose formation is more capable of solution; which is that of mosses. The origin of these as has been already explained,

proceeds from trees fallen into decay through the means of stagnant moisture. Now there cannot be a stronger instance of the change that has taken place in our woodland scenery, than that mosses are found even under the beds of rivers and contiguous to the sea-coast, where now scarcely a tree is to be seen. Some years ago the boll of an immense oak was washed bare in the shifting channel of the river Ribble, opposite Howick. Some navigators were weighing it, with intent to apply it to their own use, when it was taken possession of by the lord of the manor. In length and straightness of stem it perhaps exceeded any tree of the sort now growing in the same county : but little use was made of it, as it cracked and splintered so as to be of little value except for farming purposes. This tree most probably had grown where it was found at a time when that part was chiefly covered with wood. In digging through the upper stratum of alluvial soil, not far from the river, you now come to a bed of moss two or three feet below. It may be easily supposed that an irruption of the sea has levelled the growing trees, and at a later period has deposited upon the land a thick layer of sea sand, such as our marshes are now composed of.

If it be the natural order of things that trees should rise spontaneously in the wilderness, we may easily comprehend the process by which the woody wilderness is converted into a region fit for the habitation of human beings. Look at the wilds of America : not many years back, and they only afforded refuge to

the wild beasts of the forest, or the tribes of savages almost as ferocious as them. The latter merely cut down timber sufficient for their rude huts, or the ordinary purposes of their simple life. They were in general an erratic and predatory race, chiefly subsisting on the animals that surrounded them. To raise fruits from the earth was not to their taste. A life of tillage was of too sedentary a character for them. Then came man in a more improved state, using the arts and the arms of civilized warfare to drive them from their dwellings and take possession of their lands. The wants of these were only to be supplied by clearing away the forests. The axe was laid to the root of the tree ; down came a huge piece of timber, such as we know nothing of in this country, which furnished materials for their rude habitations. The spade was put into the ground and there turned up a fresh soil, which had never felt the impoverishing labours of former cultivators, ready to afford subsistence to a new set of beings. An increased population sprung up and went on multiplying. The savage was driven farther back into his fastnesses. Additional inroads were made into the woodland tracts. By these the face of an extensive district assumed a different aspect. Plenty covered the earth. Towns and structures both for show and convenience rose up, where not long before the savage had his cabin and the wild beast his den.

When the first wants of nature had been satisfied, and hunger, and the sufferings arising from bad food,

and perhaps still worse dwellings, had been driven to a distance by persevering industry, the thoughts were obviously directed to a higher state of enjoyment; and from a bare subsistence the comforts and even luxuries of life became the aim of earthly endeavours. Houses were erected of a more solid and durable structure. The embellishment of these both in their form, and in the accompaniments belonging to them, began to be a matter of serious consideration. Those who had raised themselves into greater importance and opulence by superior endowments of the mind; or, what is more common in an infant state, by greater skill in martial enterprises, found their ambitious views enlarged; and strived to surpass their fellow countrymen as much in the splendour of their residences, as they had outstripped them in the circumstances of their condition. Then along with the arts of a more refined era, arose a taste for improving natural scenery. The grounds around the mansion were disposed into artificial arrangements. The dry terrace for the winter's promenade, the gay parterre for the summer's recreation, became the delight and admiration of the more enlightened part of the community. Connected with these was the thick screen of plantation to keep off the northern blast, the stately oak or the wide spreading beech to luxuriate in during oppressive heat. A taste for and a study of the arts had inculcated the principles on which picturesque beauty is formed. The layer out of grounds began to be held in reverence; and planting was held to be an art, which had not only its critics who knew and could

point out what was right, but also its votaries who were inclined to practise it.

If planting be deserving of encouragement for clothing the fields with shelter, and diversifying the prospect before the eye, trees of a large size, and venerable from their antiquity, are appropriate and almost necessary appendages to the appearance of a handsome mansion. They are essential to the picturesque effect of the surrounding scenery, and they often call forth associations connected with the recollections belonging to a family of ancient descent. The massive towers and irregular outline of Warwick Castle are to a certain degree within the reach of architectural imitation, but the grandeur of the giant oak, the richness of the sombre and deep-shaded elm, when arrived at maturity, cannot be approached by art ; the most it can do is to improve the composition of the view by introducing trees of a larger growth than those raised in the common mode of planting.

The art of transplanting with effect is therefore a most important one, particularly where there is a want of fine old timber, and a new creation has to be made. There is no place, let it be ever so uninviting and little favoured by nature, which trees properly disposed will not render agreeable to the eye and satisfy the taste of even a fastidious critic. The sudden and varying changes of light and shade which they produce will of themselves please by contrast ; and the masses partially concealed by groups, here perhaps stretching

out into a bold projection, there receding behind an intervening object, will awaken the imagination by what is a component part of beauty, intricacy and variety. But here time may be wanting to complete the picture. Young plantations have a scantiness of character, which ill accords with a stately building. They supply no background ; they give neither shelter in winter, nor shade in summer. They are deficient in that boldness and variety that produces combination and harmony ; this deficiency can only be supplied by bringing to the spot trees of many years standing.

Although it may be a consideration whether, if profit from sale be only looked to, the transplanting system would be likely to answer ; yet it cannot be doubted but that the purpose of all improvement in the laying out of grounds will be greatly accelerated by this practice, if properly performed. If a judicious method be observed in effecting the removal, the symmetry and proper proportion of the trees may be preserved entire ; and there need be little more diminution of health or vigour than what the transition into a somewhat new soil, and perhaps a new climate, must naturally create. What has brought the system into disrepute has been want of intelligence in the contrivance, and of cautious labour in the execution of the work. The consequence has been that the sustaining power has been lost or weakened ; and the patient has either paid at once the debt of nature, or has lingered on in a feeble and languishing existence.

Various methods of transplanting have been recommended by different practitioners, by Marshall, Pontey, and others. But the plan of Sir Henry Steuart, though attended with a good deal of labour and expence, so much exceeds all others both in principle and execution, that it may be well here to dwell upon it at some length. The success which has attended it at his own place, Allanton, in Scotland, is put out of all doubt. A committee, of which Sir Walter Scott was a member, was appointed by the Highland Society to inspect his operations and to report thereon. This proved highly satisfactory. The place appeared to be nearly destitute of old wood, not having more than sixty or seventy old trees dispersed over the surface. The amount of trees transplanted was between six and seven hundred, which with various enclosed clumps or masses of different sorts gave to the whole a rich and woody appearance. The sorts were of almost every variety, even of Scotch firs. They were growing with the greatest luxuriance, making shoots from six to eighteen inches yearly in the openest exposure. The size of them was from thirty to forty feet high or more. Some that had been removed the preceding spring were quite full in leaf, and with a deep green foliage. All their branches were entire, and they stood firm and erect without either prop or support; nor could it be discovered that the trees had not grown from the seed in the situations which they occupied, were it not for the ring of dug ground round them, which was usually kept with the hoe for three or four years to promote their growth. The due balance of the trans-

planted trees was much aided by the position of the tree being reversed in its transplanted state. That side where the branches had been longest and most luxuriant in the original position thus became the most exposed. The growth of the tree was not in the least retarded by it, and it became more equally balanced. Mr. Kain Meason, one of the committee, observes, that the system appears to be to disturb the process of nature in the growth of the trees as little as possible. It would be impossible to move the widely extended roots of a twenty or thirty years old tree without rupturing many, however carefully the earth were moved away. Add to this, that the nourishment drawn is almost entirely from the fine fibrous roots. Hence the first operation is to cut off, at a due distance, in some trees perhaps twelve or fourteen feet on each side of the boll, the long horizontal roots, supply fresh mould, and allow by waiting two or three years, the tree to form all around those fine fibrous roots, that are to nourish it in its new situation.

From the report here given, the trial made has now stood the test of experience, and is deserving the attention of those who have new places to form, where there is a want of old timber, and who by these means may supply to a certain degree the deficiency without much labour or cost. Sir H. Steuart says that its effects are immediate; that an entire park may be thus wooded at once, and forty years of life anticipated. In the report already referred to, it is stated that at the entrance to the park at Allanton, two

plantations present themselves to the view within about forty yards of each other. One of them had been planted about five and thirty years since in the ordinary manner. The other was executed with grove trees and underwood in the style already described, and it was transplanted to its present site six years ago. On comparing these two plantations, the obvious superiority of the latter over the former was manifest to every eye. Its luxuriance, its strength, its closeness were superior. In the contrast the triumph of the transplanting art appeared complete, and its fitness for the general purposes of shelter or landscape seemed in their judgment very satisfactorily established.

There is one part of the system which seems so new and ingenious that it calls for more particular notice. Every one who has transplanted large trees in the common way will have experienced the difficulty of keeping them steady and in their proper places either by ropes or any support that can be given them. If they once get loose or rock in the ground, many of the smaller fibres are killed, and the plant will never do well afterwards. Sir Henry Steuart dismisses all adventitious aid, and steadies the tree entirely by the position in which the roots are placed in the ground. His method is as follows : One of the workmen seizes as many of the lateral roots as he can with both hands, and holding them aside, opens a view into the underbed of the roots. A second throws in mould of the finest sort in such a way as to form a bank sloping outwards of the shape of a china saucer, of which the

sides are of the depth of one half at least of the whole nucleus, or mass of roots and earth under the collar. He then carefully fills in and equalizes all the vacancies that appear; while a third with a small blunted pointed stake, or rammer, about three feet long, pushes in the mould and makes it firm in the cavities, where the foot cannot reach. The bank raised will furnish such resistance to the action of the top, that a stout man, on applying himself to the transverse ropes, will find some difficulty in displacing the roots. When the resistance is found uniform on all sides (which should be often and carefully tried) little more can be done for the stability of the plant. By the above method of giving stability before any cover whatever is laid upon the roots, a complete safeguard against wind is provided, without injury to the growth of the plant. This is truly the planting of the tree: all else belongs to the distribution and the covering of the roots.

In the distribution, the roots are stretched in the most regular manner from the centre. As soon as they are carefully separated and as it were combed out with the fingers, it is nature must teach us how to arrange them in their new bed. They should be first drawn out with an instrument called a Tree-picker. They are then to be divided into as many tiers as can conveniently be laid in the depth of the pit, allowing the strata of earth between the tiers to be an inch and a half or more in thickness. All the minor ramifications and rootlets being stretched out in the way they are to lie, fine mould must be thrown

upon them in the reverse way, that is in the direction of the points of the fibres.

A full and particular detail of the whole process is given in Sir Henry Steuart's work, which it is incumbent on those to study minutely who intend to give it a trial, as it is only by a thorough knowledge and observance of every part of it that success can be expected. It certainly requires a great deal of nice attention in the execution, and on the whole must be attended with a good deal of labour and expence. On this account it seems best calculated for those who may have occasion for practising it on a large scale. In that case it seems likely to be of the greatest use. It saves that miserable system of mutilation, which becomes almost necessary unless the roots are removed entire. If the principal organs through which nutriment is conveyed, should be injured or destroyed, the upper branches would die of themselves, unless shortened or removed. No vigorous shoot will then be made; the top only throws out numerous short offsets: and the whole plant never assumes a healthy or natural appearance.

Various other methods of transplanting are recommended. Some advise preparing the tree before the winter by cutting low down all round the roots, and then lifting it in a frost. By these means a large ball of its own earth is carried along with it, and a large part of the roots remains undisturbed. Others advise growing trees in a nursery, keeping them clean, and

removing them into a new situation in it, at a further distance from each other, after an interval of three or four years. By taking them up out of land well stirred, there is a better chance of preserving the fibres entire, and thus contributing to the future well doing of the tree.

Intimately connected with planting is the style of improvement which is to be adopted in laying down the grounds about the house. A great change in this respect has taken place of late years. When Mr. Brown, the celebrated Improver, appeared, he struck out an entirely new mode of improvement, which, like many of the freaks of fashion, was the rage of the day, and did not stop until it had destroyed every thing that was old. Nature was now to be the only guide. No more straight walks or terraces were to be tolerated. No flights of steps to connect walks. "Nothing is so ridiculous as to walk up and down stairs in the open air," was the observation of Mr. Walpole in his book on Modern Gardening.

But a greater than Brown arose, and restored nature to the place that belonged to her, making art subservient to her views. Sir Udevale Price with great talent for discerning where true beauty lies, and large powers for descriptive composition, attacked the system of Brown, and happily brought about a return to the former order of things. A descendant of Mr. Gilpin, who wrote on "Forest Scenery," the inheritor of his taste and his name, following in the track of his dis-

tinguished predecessor, has illustrated his principles in his writings, and has wrought them out in his professional practice. He has clearly shown that nature is not the only guide in the decorations about a house.

Since the days when men ceased to live in the open air, and became the inhabitants of well built houses, all their wants have been artificial. Their mansions improved in embellishments according as civilization and refinement increased. As we are therefore no longer existing in a state of nature, there can be nothing inconsistent with true taste to bestow all the proper accompaniments on a handsome mansion, and to make that, which is immediately connected with it, suitably decorated, and as it were, a part of it. If, according to Mr. Brown, it may be made to resemble a natural scene up to the very windows, however happily it may be disposed, yet there is no gradation betwixt the house so highly ornamented, and the lawn or park. A sunk fence not only fails in forming a sufficient distinction betwixt the two, but rather gives a feeling of intrusion, than of privacy and retirement. What more appropriate mode can there be of laying out that part, which is to serve for use and recreation, than to enrich it with those decorations, which add beauty to the main building, and at the same time not only please the eye, but contribute most to enjoyment. Its superior claims to variety and picturesque effect seem scarcely to be disputed. Terraces rising above each other, or even a broad gravel walk when

adorned with urns and flower pots of every tasteful description, make a splendid appearance. A wall is of itself a marked fence for giving seclusion to a Flower Garden, and if broken by balustrades or by pillars at fixed distances with urns placed upon them, is strikingly handsome, and what is frequently introduced by Claude into his pictures. This shows that nothing makes a more appropriate foreground, particularly if accompanied with trees properly disposed.

The enjoyment of a sequestered spot of this kind is also undeniably great, either in the summer or the winter time. An old-fashioned garden with beds cut into numerous fantastic shapes, edged with box, and gravel walks running between them, gives a gay and well-diversified scene. It is here that the student may indulge in his reveries, the florist have an innocent pursuit gratified, and the common observer be delighted with the well mixed beds of flowers and evergreens. A spacious gravel walk immediately under the windows, or a flagged one afford a most enviable place for exercise from its dryness, and from the shelter and warmth of it in the winter time it is extremely inviting. Sir William Temple has described a garden of this kind at Moor Park, in Hertfordshire, belonging to the Countess of Bedford, which he says was one of the most perfect he had ever seen either in this or any other country. Sir Uvedale Price pours forth his lamentations on having destroyed one after the old style to gratify the wishes of the owner, and to suit the prevailing taste of the day. But he says

he did it almost against his own better judgment, and that he repented of it ever afterwards.

The situation betwixt the highly dressed ground and the wilder part having been fixed by a marked distinction, the composition of the landscape is to be considered with reference to the rules of art. Those laid down by the great painters, and developed in their works, those that set off to advantage a picture of Claude or Salvator, so different in their style yet so accordant in their principles, are equally applicable to the improvement of rural scenery. Objects must be disposed in such a manner as to form the most perfect combination. There must be an unity of design in these different parts, so that they constitute a whole. The disposition must be such as to give a foreground, a middle, and a background, the same as it is laid down by the ancient critics, that in a poem or a tragedy there should be a beginning, a middle, and an end. Each of the parts should associate properly with one another. Proper contrasts in form and colour are to give effect. Imposing masses of wood are to create strength and depth of character. These again are to be broken by groups of trees and single ones. On the other hand, if the parts are divided too much into detail, confusion and littleness, leading to insignificance, will ensue; breadth and depth of light and shade will be wanting.

Mr. Brown's system, in which he was followed by Mr. Repton, was to smooth his ground down to insipid

tameness ; and to shape his plantations into a stiff formality of outline. Hills were levelled and valleys filled up to destroy abrupt terminations, and to give easy curves and undulations. Though beauty may be said to consist in smoothness and softness, perhaps more than any other quality, and the curve, according to Hogarth, is the line of grace, yet here, if carried too far, it will cause baldness and monotony. Contrast will be wanting, and it is only by a happy mixture of two opposite properties, that a real effect can be produced. The pleasure this will give, is like the dimple in the cheek of a beautiful woman, when the play of the features causes inequalities with the smoothness surrounding them ; or it may resemble what Lord Byron calls the music of the face, whose sweet harmony may be varied by melodious transitions. Roughness, and quick and abrupt changes, cause the picturesque, as much as easy variations the beautiful. Although it may not be consistent with neatness to allow docks or thistles to grow in a pleasure ground, yet plants may be introduced to produce a similar effect. Fern in a park has a wild appearance, and the holly, with its red berry in the winter, is always a pleasing object.

Mr. Brown's style was to surround the whole grounds with a continuous belt. He dealt largely in circular and oval clumps, which frequently crowned the top of an eminence. A clump placed by itself, and totally unconnected, has a bare and formal appearance, it requires to be grouped with larger masses of wood and to be relieved by single trees. Thickets are also pre-

ferable for beauty to trees drawn up so close as to lose all their side branches. If these are composed of yew, holly, hazel and thorns planted amongst the trees, the inequality of their growth will break the sameness and formality of trees alone, particularly if they are all of one sort.

As to the belt it is necessary to have a separation betwixt the open ground in the park and the enclosed fields without. Large plantations will be there required to hide the paling or boundary fence. But if these shut out a distant prospect and every pleasing object connected with it, if they are carried in one un-deviating line, without regard to variation of ground, or without being broken by intermediate points, they will circumscribe the view into too confined a compass, and prevent that proper combination, which, as has been already described, is the foundation of all true principles of taste.

If the position of the plantations be thus fixed by high considerations, and must be made subordinate to the rules of art, the connection of the covers must depend upon contingent circumstances. In many instances it is usual to confine all the covers to the neighbourhood of the mansion. This often crowds them together to such a degree as to render them of no use towards affording additional sport. It will give more shooting ground, but not more shooting. Whatever the quantity of covers may be, this will not increase the quantity of game, as there will not be

more bred in consequence on a certain extent of ground. Regard therefore should be had rather to the covers generally throughout the whole command, whatever that may be, than to those around the house.

The old-fashioned belt, dull and monotonous as it is in character, often makes a good preserve, where there is plenty of ploughed land adjoining it. In some places it goes all round the park, and where that is large, it must then of itself afford an extensive range. But generally speaking, the park and home district are not favourable for the encouragement of game. They may do well for that of a tamer description, but much the reverse for pheasants. They want the coarse herbage, the thistles, the docks, the multitudinous weeds that bad farming produces, the luxuriance of crops which good. They cannot also be kept so quiet, and are liable to be constantly disturbed. Covers in the midst of fields are much the best, not only as affording the greatest variety of food, but from the highest and thickest hedges creating shelter, and the roughest cops the most secure breeding ground. These should be so connected with each other throughout the whole preserves that there should be a chain of them from one extremity to the other. The largest and most material should be in the interior part, but even near and close to the outside, pheasants may be made so attached to a spot, that they will not stray away, nor leave it far. They may be managed in this respect the same as the common barn-door fowls. If

the whole range of covers be formed after a regular plan in the manner mentioned, rather than at random, where chance may lead or accident direct, great facilities will be afforded to the general system of preserving.

GAMONIA .

PART II

Penwortham, with conclusion of a Rattle:



All's well, that ends well.

GAMONIA

PART II

A full and complete system of planting has now been laid down, showing the proper preparation of the soil, the manner of putting the trees into the ground, and the sorts to be grown according to the uses for which they are intended. A good beginning is said to make a good ending.

This may be true to a certain extent. A work undertaken with zeal, ability, and judgment, promises fair for a good termination. But we must not stop half way. Determined labour we know conquers every thing. It remains to be seen what is the best treatment to be adopted afterwards to attain the two ends, making the greatest profit from timber, and forming the most efficient covers for game. Some remarks will then be made generally on the best mode of preserving game, and the advantages to be derived from it as a reasonable recreation.

In forming covers the underwood should be put in along with the trees. There is nothing in which

covers are so deficient, and indeed many of them almost useless as preserves for game, from want of a proper attention to this.

Plantations of young trees will of themselves make the best possible covers for a certain number of years. The side branches lap into each other so that they become an almost impenetrable thicket, sufficiently hollow underneath. Then arrives the critical period, at which they fail. The side branches begin to decay. Every thing underneath, even the withering grass has been killed long ago. The owner thinks it right to make up for lost time, and thins largely, believing that this alone will make the cover a good one. O short sighted mortal, why indulge in fanciful and vain expectations? You might almost as well expect to find a pheasant on Salisbury plain, as in a cover so mutilated and denuded of its richest ornaments.

Complaints are often made of being infested by poachers, of its having been a bad breeding season, of the smallness of the increase, notwithstanding few had been killed the year before; yet how little is it considered that pheasants like to be protected as well as other things. Any fox-hunter will know that if a cover gets too hollow, the idea of security is gone, and the fox soon becomes an absentee. Why should it not be the same with the pheasant? Certainly, if one looks at a large preserve, and makes a calculation of the quantity killed in proportion to its size, of the little increase, if any, in number to former years, or

perhaps even a diminution, it must seem as if there was something defective in the system generally pursued. Keepers are employed with watchers at night to any number, high feeding is used without regard to expense, every pains taken to encourage breeding, yet in many cases how inadequate is the result from all these labours and anxieties. The first thing therefore is to make covers that will be good not only for a few years, but which will be going on constantly improving, and which the longer they continue the better they will become.

If the underwood be put in at the same time as the trees, the distance of the plants should be six feet apart. There is nothing to be named with hazel for making a good thick underwood. White or black-thorn is unpleasant to shoot in; and if they get cut down, hares and rabbits are so fond of the young shoots rising from them, that it is almost impossible ever to get them up again. As to hollies it is next to a hopeless case to have them where there are rabbits, as they will be sure to bark them the very first severe frost that comes. Hazels bear well the shade; spread out well; and rise quick from the hatchet, when cut down. To give thickness at the bottom, brambles of that sort that keep their leaves in the winter, may be got from the hedge rows, and planted among the hazels. Nothing is so good for ground shooting, as the thick lying they create for hares and rabbits. Privet is good to a certain degree, but it had better only be planted in patches, or at the end for making

a thicket to beat out at. It is not so certain that pheasants like it so well as a hazel cover. It is apt to get laid, and then it prevents their running. It is an advantage to plant box along with it, which keeps it sufficiently open below, but not entirely naked. Gorse makes a good cover for a certain time, and one that all game is fond of, as affording protection both from man and animals : but when very thick, there is no forcing the game out of it ; and it soon gets hollow, and will not grow for any time under the drip of trees.

A method of getting up underwood has been practised in many places by laying the suckers that have sprung from the stools of old trees cut down. They may afford shelter for a short time, but they soon rise so tall and hollow, that they lose all pretension to a thicket, which is what should always be aimed at. When they have got to any size, they die off. But the great objection to them is that they exhaust the ground of all that nutriment that should be left for the standard trees. Every tree, therefore, when cut down, should be fallen quite into the ground, never to rise again.

About every ten years the hazels will have reached such a height, that they will be getting hollow underneath. They should then be cut down quite to the ground, the axe striking upwards, that the boll may not be split. Each cover should be made sufficiently large, that the underwood may be cut down at four

different periods. There will then be a succession of it at different ages. The younger part will be full of long grass and briars, which will be good for ground shooting: the older more suited to pheasants. A cover thus formed will be good for all sorts of game; and will be always improving instead of deteriorating as is too often the case. It should always be kept in mind that the trees are of no use except for the pheasants to perch in; and with this in view, too much attention cannot be paid to the underwood, which alone constitutes the excellence of a cover. For a cover to be quite perfect, there should not be a single part, however small, but what is of some use. Instead of that, how often is it seen that there is scarcely any part good for any thing; and in that case there is much ground nearly thrown away.

It is an advantage to buy seedlings both for trees and underwood and put them in a nursery garden ready for use, when wanted. This is a great saving of expence; those purchased of an age fit for planting are also not so good, being apt to have been grown in rich soil, and thus forced; and to have been too much drawn up by having been kept too close. All trees should be planted out in better soil than what they were in before removal; or they will suffer from the change. Seedlings may be had cheap from Messrs. Arch. Dickson and Sons, Hawick, near Langholm, in Scotland. They are more hardy from coming out of a colder climate. Seedling hazels may also be had from thence, and should be treated in the same way.

They should not be planted out till several years old. Privet may be raised, without a chance of failure, from cuttings, and box from slips.

Judicious thinning is one of the most important parts of woodland management. From want of it how many plantations do we frequently behold, if not ruined, injured, almost beyond hopes of recovery. To gratify the vanity inherent in human nature of having large possessions to boast of, an extensive tract of country is covered with trees. These are left to run wild without any attention paid to their training or thinning. They are drawn up so close that neither sun nor air can get admitted to them. Their height is carried up without the proper thickness proportionate to it. After a long period of neglect, a fit of improvement seizes on the owner. The axe is put in requisition. Large openings are made—some trees, particularly the oaks, are drawn up so tall that they fail in supporting their own weight from weakness, and bow their heads to the ground. The whole look naked and sickly, and from being starved, by unaccustomed exposure, are long before they assume a healthy and flourishing appearance.

The objections to this system are manifest to a common observer. It is right and proper that trees should be kept at first to a certain degree close, but not crowded. They mutually support each other; and if height is gained first, thickness will follow after. But then it is against all the principles upon

which the natural properties of trees act, that they should be made to obstruct each other's progress from want of room. If the head cannot extend itself, the general growth is impeded, as the larger the top is, the more the tree is in a thriving condition. But independent of this it is impossible in this case to have more than a certain quantity of produce on a certain extent of land. If the trees have been thinned out at proper distances, there will be more square feet of timber within a given space of ground, than if they had been kept more crowded. Let a tree be examined that grows on the outside of one of these thick plantations, and be compared with the others within. It will contain a larger quantity of wood than a great many of the others put together. Its branches all extend outwards from their want of room on the other side. Here they throw out more vigorous shoots from the confinement which they undergo elsewhere, a sufficient proof that the admission of sun and air is necessary to them for their existence and well-doing.

From the plan here laid down the thinning of the trees may begin at an early age. A great many of the willows may then be removed, which will be of use for posts and rails. In a few years more part of the larches and the remainder of the willows. Some years after that, the remaining larches, which will serve for boards and farming purposes. There will then be nothing left but the oaks, and spruce firs. An oak of a good age is by far the best as a standard tree for use and appearance ; and being the most

favourable for underwood, as has been already stated, should of all others be most encouraged.

Particular attention should be paid to the clump of firs. As soon as their side branches begin to touch each other, some of them should be immediately removed. When they preserve their side branches alive, the shelter they afford is very inviting to pheasants. They will resort to them at all times both by night and day. This gives them a great security against poachers ; and when they have been much driven about in a battue, they will often seek them as their last place of refuge.

Although trees may have suffered severely in the extension of their branches, and the vigour of their stems from having been kept in too crowded a state ; yet their restoration is not entirely without hope. The thinning must be done with a sparing hand, and by slow degrees. The worst trees both for quality and shape, should first be taken out ; such as those that have grown into an irregular form ; or which have divided themselves into two bolls, and which thus would never look well, nor be equally profitable for timber. If this is done with judicious caution and discernment, it is quite extraordinary how soon new shoots will spring forth ; and how wonderfully nature will act in reclaiming itself from past errors. Though it is too late for large branches to be thrown out, yet they will soon acquire a new aspect from their becoming sufficiently bushy to hide their own nakedness, and thus afford beauty in ornamental groves.

Nor is a growth of underwood, though a difficult acquirement, to be entirely despaired of. Hazels will chance to grow if the space above is kept sufficiently open. They should not be planted young, but some six or seven years old. They should have been kept in the nursery to this age or later, and have been headed down to about six inches from the ground the year before. Privet will do still better than the other in an old plantation, and has been known in this case, when every thing else has failed, to have grown bushy, and formed quite a thicket.

The proper form and appearance of trees is a most natural requisite not only for imparting that beauty which pleases the eye from correct symmetry, but which contributes to the increase and well-doing of the tree itself. Nature in many of her productions is apt to run wild, and then needs the art of man to bring things into proper order. Young trees when left to themselves often become too bushy ; instead of throwing upwards a leading stem, they divide themselves into smaller parts, and lose their fair proportions. It is therefore important to consider whether by artificial means these defects can be so remedied as to improve the appearance of them, and at the same time to produce a beneficial effect on their growth.

Sir Henry Steuart, in his "Planter's Guide," has entered into an elaborate and copious disquisition on the anatomy of plants, and the organs and properties they display, as connected with the principles of

physiology. The circulation of the sap in trees has of late years called forth much ingenious discussion, the importance of which cannot be estimated too highly, when we consider, that on its operation and progress the treatment of the tree, whether for good or for bad, materially depends. That the flow of the sap, is what supplies the bulk and vigour of the tree, no one ever doubted ; but in what manner it circulates through all its parts ; whether it may be carried up too quick, and in that way injure the quality of the wood, or to what degree its passage should be checked by lateral branches, requires acute observation and enlarged knowledge.

The theory of Sir Henry Steuart is so little known to planters ; is so interesting in its nature and operation ; and so necessary for the proper management of trees, that no excuse need here be made for introducing rather a copious extract from his work.

“The bark of trees is accounted by phytologists as among the composite organs. It consists first of the Epidermis or external integument of the plant ; secondly of the cellular tissue or Parenchyma, that is the soft pulpy substance immediately under the Epidermis ; and thirdly of a number of these cortical or concentric layers composing the mass of the bark ; of which parts the innermost is denominated the Liber from its having been anciently used to write upon, before the invention of paper. If the cortical layer be injured or destroyed by accident, the part is again

regenerated and the wound healed up, without a scar. If the wound have penetrated beyond the Liber, the part is incapable of being regenerated ; because, when the surface of the Alburnum is exposed to the air for any length of time, there will be no further vegetation in that part. But if the wound be not very large, it will close up, first by the production of new bark issuing from the edges, and gradually narrowing the wound, and then by the production of new layers of wood, formed under the bark as before.

“Early in the spring the sap begins to rise in woody plants, and continues to ascend till it reaches the extremities of the branches. The sap is absorbed from the soil, by the extremities of the capillary rootlets, and conveyed upwards through the vessels of the roots by the trunk. In its ascent it rises only through the wood and the Alburnum in tubes of various sizes, and is prepared or elaborated by the leaves. That process, according to some, is effected by means of an alternate contraction and dilation of the sap vessels, and still more by a respiration perceptible, and imperceptible in the leaves, which is peculiar to plants, whether woody or herbaceous, and by the action of the atmosphere. But according to others it is rather the exhalation from the leaves, than what is properly their respiratory formations, that affects the ascent of the sap. When that has taken place, the sap is then converted into the proper juice, or what is by some called cambium, that is, juice fitted for nutrition ; and it descends by the returning vessels of the leaf stalk,

and the longitudinal vessels of the rind, or inner bark. Thus the circulation is carried on by a double process, the ascending and descending, whereby the vessels terminate downwards in absorbents, by which the fluids are received, and they terminate upwards in exhalents, by which these fluids are discharged."

From this curious account it is apparent of what importance it is to the planter to maintain the sap, and still more the proper vessels in the due exercise of their functions, and to protect them from external injury, of which cold may be considered as the greatest. For this purpose nature has provided such trees as are in open exposures with a thick and coarse covering of outer bark, which forms a defence from the elements to the inner bark, in which the descending or proper vessels are situated.

Further ; "We know that heat is necessary to cause vegetation, as well as to continue it. Hence the wonderful effects of shelter in close woods and plantations, in encouraging growth. The Epidermis and bark of trees, drawn up by shelter are usually thin, the former often smooth and glossy. The descending vessels, by consequence, as they lie under it, never fail to suffer severely, on being exposed to a cold atmosphere. It is greatly on this account, as well as from scantiness of roots, and lateral boughs, that plantations sustain such extensive injury on being suddenly thinned. When that operation is performed in a gradual manner, it gives time for nature to pre-

pare the tree for the change by strengthening the coat of bark, and likewise by multiplying the roots, and thickening the spray and branches ; and thus the proper vessels are prevented from being chilled by untimely exposure.

“The stems of trees are augmented in width by an annual layer : and in length by an annual shoot, springing from the termination bud. The extension of the shoot is inversely as its induration, rapid while it remains herbaceous, but slow as it is converted into wood. Hence moisture and shade are the circumstance of all others the most favourable to elongation because they prevent induration or retard it. In close and confined plantations trees push towards the light, and from the warmth which their situation affords, their stems being thin and slender in proportion to their height they are destitute of strength to resist the winds. The natural consequence is, that their roots are extremely apt to be shaken and displaced in the ground, and prevented from sending proper food for the branches and other parts of the tree.

“As trees have no organs anomalous to the mouths of animals, they are enabled to take up the nourishment, which is necessary for their support, only by absorption and exhalation, as the chyle is taken into the animal lacteals, or air into the lungs. The larger portion of the root serves to fix the plant in the soil, and to convey to the trunk the nourishment absorbed

by the smaller fibres, which ascending by the tubes of the alburnum is thus conveyed to the leaves. Roots moreover by their vigour and numbers, must previously stretch out under ground, before the branches can extend themselves into the air ; and the roots in their turn, receive vigour and extension from the advancement of the branches.

“Branches may properly be considered among the most important part of trees, as they certainly are the most beautiful. The ascent of the sap from the roots seems to be considerably assisted by a proper number of side branches, distributed along the stem, and the general health and vigour of the tree are in the same way increased ; so that it will ultimately attain a greater size than if deprived of such branches, or very sparingly supplied with them. We further find, that the solid texture of the wood depends on the quantity of the descending sap, and in a great measure likewise on the shortness of its descent ; both of which objects are materially promoted by their lateral branches. But should they exceed the due number requisite for those important purposes, retaining too much of the sap which they prepare, and affording too scanty a supply to the stem, they may, in ordinary cases, be considered as robbers, and should be curtailed by pruning within proper limits.”

This beautiful system of physiology is curious to the lover of science, as showing the ingenious contrivances which nature employs in attaining her ends ; and use-

ful to the planter, as directing his operations to correct principles. A knowledge of first causes is necessary for the proper application of the results springing from them. We see in this instance the roots of the tree drawing their food from the particles of the earth best suited to them ; selecting some, rejecting others ; we see this food entering into the system after having undergone a certain process which converts it into sap ; it then circulates through the different parts, increasing the stem, elongating the terminal branch, penetrating into the leaves, where it undergoes a second change to prepare it for more active nutrition ; it is then returned back again from the root from whence it came, extending that in a similar proportion, to what it had enlarged the extremities above.

An intimate acquaintance with the properties here described and a full developement of their powers and activity, become indispensably necessary before any successful result can be attained either in the management of trees when single, or in a mass. In the opposite situations here mentioned, the character belonging to them assumes quite two different aspects. If a tree is placed by itself and in an exposed situation, the leading branch soon loses itself insensibly into many minor branches ; and it becomes what is called clump-headed. The roots here proportionally increase and strengthen themselves. This gives it a more firm position to withstand the force of the wind. The outer bark also here attains a rougher and thicker coat to protect it from exposure.

These principles established, it is made apparent, that in practice a greater error cannot exist, than in first keeping plantations too thick, and then in thinning them too largely at once. If both the top and the root bear a correlative proportion to each other, it is clear that unless there is room for the two to extend themselves, the means of subsistence and consequent enlargement cannot be supplied. On the same principle the bark after having been made tender from close confinement, must be allowed time to harden gradually before it can afford protection to the juices of the sap within, and consequently contribute to the general health and vigour of the tree.

A knowledge of the physiological system is also necessary for ascertaining what is the most proper training for a tree. Nature generally supplies her productions with what is requisite for their preservation and support. Art can only improve upon her efforts by correcting what is wrong from accident or disease ; or checking some extravagances proceeding from too redundant a growth. Pruning therefore may be of use, where some part of a tree has received injury : or where it requires being brought into a more correct symmetrical form ; or for the purpose of increasing the bulk of the stem. The side branches of a tree are beautiful excrescences ; they also serve as conductors for the sap through its different ramifications. By the check which these give to the flow of the sap, they help to increase its consistence, and to enlarge its dimensions. Nothing can show more

strongly the disadvantage of destroying these lateral appendages, than the slow progress which a tree makes, whose side branches have been killed by too great a confinement. But nature herself here generates, without the aid of the art of man, what is most beneficial to her cause. If the bough of a tree be cut off, the sap makes an effort to relieve itself by throwing out numerous little shoots in room of the larger one removed. These, if left to themselves, after a certain time, will carry off from the tree an equal quantity of the vital fluid, as if it had remained in its former unmutilated state. But then here it is spoilt of its principal feature: it is diminished into smaller parts. Instead of its extending at some distant period a gigantic arm, that is stretched out with a bold magnificence, it degenerates into a bushy diminutive scantiness of projection. Many trees, particularly the elms of the midland counties, that have been lopped for the purposes of fuel, are an instance of this. They have been deprived of their choicest ornaments, and look no better than so many miserable pollards. It has been stated that, if pruning be done in the latter end of summer, the part will heal without sending out these offsets. This may be worth knowing. If true, it might prevent a tree being disfigured by the number of small shoots thrown out. It is certainly not inconsistent with reason; as if the descent of the sap be about that period, it may neither be in that strength, nor that situation, being confined within the inner coat, as to act with the same force externally as the more powerful ascending matter.

From what has been said, it should appear that pruning should not be applied to any extent ; that too free an use of it affects the health and vigour of the tree ; and entirely destroys its just proportions. Nothing can be more hideous than the tall and erect bolls we sometimes see trimmed up, as with a pair of shears, like a sweeping brush.

If we were to except from this animadversion any trees whatever, it would be some of the fir tribe. Certainly any one who has beheld the Pinasters in some of the villas near Rome and Naples, with their grand umbrageous umbrella-like tops, would admit that these were splendid exceptions. But here the mildness and warmth of the climate, so important in forwarding vegetation, may have a beneficial tendency. Under such a genial sky the sap may flow the greater part, if not the whole year round.

The supposed increase of the bulk of a tree by reducing the number of its branches, seems to proceed from the idea that the quantity of sap which was before disposed over a wider space, would be concentrated in the stem, and thicken it. Some improvers, scientific as well as practical, are of opinion that a tree is capable of cultivation, the same as a cabbage in a garden. This theory was advocated by Mr. Pontey in his treatise entitled the "Forest Pruner." On this principle he pruned a tree at Woburn, called the Woburn beech, which was seventy feet in height, and was pruned up fifty feet from the ground. Mr.

Loudon was of a similar opinion. At the same time, in recommending this method, as producing a greater substance, he admits that the quality of the wood would be deteriorated by it. In his "Encyclopædia of Gardening," he says: "The general effect of pruning I consider to be of a corresponding nature with those of culture; that is, to increase the quantity of timber produce. The particular manner in which it does this, is by directing the greater part of the sap, which generally spreads itself in side branches, into the principal stem. This must consequently enlarge that stem, in a more than ordinary degree, by increasing the annual circles of the wood. But whatever tends to increase the wood in a greater degree than what is natural to the species, when in its natural state, must injure the quality of the timber. The solid texture of the wood greatly depends upon the quantity of the sap which must necessarily descend, and also on the slowness of its descent. Now both these requisites are materially increased by side branches, which retain a large quantity of sap, and by their junction with the stem, occasion a contraction and twisted direction of the vessels, which obstructs the progress of the proper juices."

These scientific remarks assign reasons sufficiently strong to prove that pruning must be attended with beneficial effects, if done with moderation and judicious management. At the same time there is a great difference in various sorts of trees, some requiring the knife much more than others. The oak particularly,

and that, which is the best of its kind, the Scotch elm, are apt to run too much to branch in their early stage ; and if left to themselves, unless kept for many years in a very crowded state with others, will have a straggling and unsightly appearance ; and will not put forth any clean straight timber. The great use of good training is to form an upright stem, with lateral branches rightly disposed, not so numerous as to weaken the main body, but sufficiently so as to act as auxiliaries to it. This can only be effected by beginning early ; and by training it up, like the child, in the way it should go, it will then be less likely to deviate from it. The work should be begun about the third year, and may be continued at different periods for many years afterwards. Care is to be taken that due preference be given to the leader, that any branch which competes with that should be removed in time ; or, whenever one in any part preponderates over the rest, then it should either be curtailed or entirely displaced. No bough should ever be taken off bigger than a man's wrist. Even one of very small size is in danger of creating a knot, and causing unsound timber. If a branch of a small size be cut off close to the stem and even into it, in two or three years the bark will have grown over the part, and there will be no blemish to be seen externally. But if it be a large one that is taken off, the sap will never so far extend beyond the lips of the wound as to prevent the wet penetrating within ; and then internal disease must ensue. If therefore trees have been neglected for a good many years, it becomes more requisite that the pruning

should be administered more cautiously than if done earlier. The miserable lopping system should be entirely exploded. The axe or the hook should never approach a tree except in the last extremity. The work should be done with the saw quite close to the boll, and then the sides may be smoothed over with the knife. When trees have arrived at a more advanced age, any of them that have divided themselves near the ground into two forked limbs, had better be cut down at once, than be tampered with in the hopes of reclaiming them. By taking off one of their limbs decay would be generated before the wounded part had got healed; and thus in a few years would be seen a tree flourishing outwardly in its branches and leaves, but rotten at the core, and mocking the hopes of its interested proprietor.

Intimately connected with the subject of plantations is the means by which they are to be guarded from external invaders. The labours of the planter may be vain, or nearly valueless, by the depredations committed in a few short hours by farming stock of different kinds. If it be in a sheep country, the plashed hedge, such as is well known in Leicestershire, consisting of two rows of thorns, one to form the upright stake leaning outwards, the other cut half way through at the bottom, and then intertwined with the upright, can alone effectually turn them; but, if it be required only to keep out cattle, one of a more simple and less expensive kind will answer equally well. It is recommended by many to plant upon a raised bank a single

row of thorns, and to keep these perfectly clean for the first two or three years. But what is called the Scotch mode of making a hedge is infinitely preferable. The ditch is made two feet in width. The soil taken from thence must be placed a foot from the edge of the ditch the sward downwards, the thorns are then put horizontally and facing outwards on the earthy part of the sod. The good sod is thrown upon their roots, and the bad behind. The hedge betwixt the foot of the cop and the ditch serves for the posts to stand on with two rows of rails attached to them. The great merit of this method is that the thorns have good soil to shoot in both above and below ; and that they will not want weeding, as they will be grown of such a size as to make a sufficient fence by the time the railing decays. Keeping them clean, which may be done by a common hoe, will of course accelerate their growth ; but this does not seem necessary. Even without it they come on much quicker than when planted on a cop, where they are apt to be killed by drought ; and are often impeded by being planted in bad soil ; and, unless constantly hoed, are in danger of being smothered by long grass and weeds. If the situation be in a part that is liable to be much preyed upon by hares and rabbits, a second row of thorns may be planted with another sod placed betwixt the two.

In a large preserve there will always be serious losses, in case the young ones are not brought up from the eggs mowed over ; or in cases where birds

have forsaken their nests from having been otherwise disturbed. In Norfolk where so many artificial grasses are grown, and these spring early, great damage is done from the mowing. There the system of rearing the young ones is so well understood, that few are lost. In other countries, where much experience has not been attained of the best way of doing it, few are reared, so as to be turned out, in proportion to the number of eggs brought in.

Hens of the bantam breed or of the smaller sort, must be ready at the time likely to be wanted. A proper and convenient covered building should be made for them to sit in, with boxes, the same as for pigeons, raised a small height from the ground. As soon as the young birds are hatched, both the white and the yolk of eggs boiled quite hard should be given them with white bread. This with ant-eggs should be continued for about three weeks. They should be fed every two or three hours. They should then have some curds mixed with oatmeal. Some lettuce or docks are also good for them. They will not begin to eat grain till in about ten weeks' time, when the best for them is some refuse wheat in the straw after it has been lashed out. At about twelve weeks old they may be turned out. Each coop should be fixed in a frame, and should be moved into a fresh place every two or three days, or oftener in case the ground gets wet, which it will do even by giving the ants from the wet soil thrown along with them. A net should be placed over the coop at night

to prevent vermin getting to them. When about three weeks old, the frame may be raised by a brick put under it. The space for the coops may be about forty yards square; or according to the number of coops wanted. The place for them is best near a small cover. The birds will then go to it in the day; and for some time, until they grow too wild, will return to the hen at night. They will at length leave the hen, which may then be taken away. This is a better method than taking them and turning them out of a bag into a cover. The ground for the coops should be changed every three or four years, or it will get tainted. Partridges and pheasants may be both treated in the same way, except that the former come faster on, and may therefore be turned out sooner.

Another receipt for bringing up young birds, which by some is preferred to the other, is as follows. When they are first hatched give them a little boiled egg and bran; then a little curd and oatmeal, and a little savoy biscuit, mixed with these, about twice a week, and about twice a week give them some dock leaves, a few lettuces and a green onion, all minced and mixed with curd. Then make a loaf of three pounds of flour, six eggs, half a pound of sugar, four ounces of sugar candy, and four ounces of butter, without yeast. Then occasionally give them a few maggots (not too many) or as many ant-eggs as you can procure. Mix a little egg and liver together, which give them about once a week.

In the whole system of preserving, there is no part more important than that of feeding. Without proper attention to this all the other labour and expense will be entirely thrown away. Poachers may destroy by night, vermin may diminish by day : these will thin the stock to a greater or less degree, as it may happen ; but without the other it is quite impossible that it can be either raised or kept together. Where the only supply of food has to be derived from artificial sources, it is quite clear that such must be adequate for satisfying the wants of nature ; or instinct will urge the seeking a provision elsewhere.

The quantity that a pheasant or a wood-pigeon would consume, if they were to be supplied with a variety of food, and to as great an extent as they would wish, would almost exceed belief. The following articles have been found in the crop of a wood pigeon, having been shot in an evening after it had fully fed :

664 grains of oats.

30 beans and peas.

10 acorns.

Besides a handful of green clover.

This may appear exceeding the powers of the bird : but it is well authenticated. According to Walton's "Angler" there are three sorts of tame pigeons, croppers, carriers, and runts. The cropper is called so from the size of its crop. When this is full, it will swell out so as to appear as large as the remainder of its body. The quantity this will contain will prob-

ably be much greater than that of the pheasant, but the latter from its size must require a large supply. The main thing to be looked to is to give what is requisite without any unnecessary consumption or waste. There is a great loss in giving at once a whole stack for the birds to root amongst, and to take what they please. This may do well for a lazy keeper, to save trouble, but ill for the master, when the keeper's bill is brought in at the end of the season for articles of food, in case it has been purchased. But though it is not good for a stack to be left loose, it is of great service to have one made at one of the principal covers; and to place a wooden cover of boards upon the top of it, to prevent the birds pulling it to pieces. When they know it is there for them, they will become more attached to the spot, and consequently less likely to stray away, in case the quantity given should by any accident prove deficient. The feeding should be done every day. It is best the first thing in the morning. It may then be seen whether any remains over from the preceding day. By being delivered out in small quantities at a time, there is also less chance of its being preyed upon by other birds or by rabbits. If the respective situation of the covers be according to the manner that has been already laid down, lying within a suitable distance of each other, there is not so much trouble from feeding in the way described, as at first sight there may seem to be. The main stack will be formed in the central preserve; the smaller covers around will be fed from it.

Barley on the whole is in general the best thing for feeding. Much of course will depend upon the price going, and the season. Beans at times may be cheaper; at others barley that is unfit for malting may often be bought at a low rate. Potatoes in most years are good, when mixed with grain; but they would not answer at their present price 7s. 6d. to 10s. a load. Pheasants are extremely fond of them either raw or steamed. They may be scattered about near the feeding place, and will be always there for them to come to, when other sorts fail. There is a large coarse kind of cattle potato, which grows to a great size of several pounds weight, which may be cheap and answer well. An instance is known, where there is a large preserve, and a greater quantity of pheasants killed in a day than in most other places, and in this the only thing used for feeding is potatoes. These are thrown loosely about in different parts of the cover. It makes however a great difference when it happens to be in a turnip country. As long as this crop remains out, which it frequently does most or the whole of the winter, there will be a supply at all times to be resorted to from these. American grain used formerly to come over in quantities, and might be bought cheap; but the late prohibition has put a stop to this. At the same time it is always better to give food in the sheaf rather than in grain. The birds peck amongst it, and from their not getting to it so readily, it goes farther.

The feeding shed is best made with a boarded roof

in the pent house form, upon posts about five feet high. It should be made rather long, or the old birds will drive the young ones away and get all themselves. The feed should be put upon open bars, which will let much of the grain fall through by the birds scratching amongst it. Potatoes may be put underneath.

Feeding is certainly one of the principal expences in preserving game. Then there is a set off to this (thanks to Lord Althorp) from the sale of it. Pheasants will any where fetch 5s. a brace, and in London considerably more. This expense therefore is no more to be considered than that of the poultry yard, one thing being excepted. The difference betwixt the two is, that one requires keepers; the other nothing more than a faithful dog, or a good lock and key. Let the cost of keepers be placed to the account of pleasure received, and the balance will then be fairly struck. The only proper mode of calculation as to the general expense, is to set this against any other amusement pursued by the higher orders. Look for instance at a stable in Leicestershire, with perhaps twelve or from that to twenty horses or upwards, and compare the expense of that with the return it brings in. A stable of twenty horses belonging to Lord Waterford, sold at Tattersall's for more than £3000. A good close sticker to the sport has been known to hunt nearly one hundred times in a season; but take the generality of those at Melton, some having engagements elsewhere, others

frequently running up to town, when weather and sport are unpromising, see how many times in a season these go out, reckon then what each time would cost, taking in the price of horses, accidents, losses of different kinds, and keep; and the amount would startle: to use a cant term now in vogue, it would be quite awful. Again, look at the turf. Horses at Newmarket are a speculation much the same as any gambling transaction, but with this difference, that betting upon them may be almost reduced to a certainty. If pains are taken to make a book, by beginning early, and taking advantage of the constant variation of odds, a certain gain may be almost always insured. The chances therefore are all in favour of the lowest of the betting tribe, and against the owner of the horse. But look to country racing without betting, and a person must be in high luck, and have an extremely good stud of horses, who can clear himself. The generality lose largely.

The owner of the Underley stud seems in a fair way to realize a fortune, when he can sell a yearling colt by Muley, for nearly £700. If this could be done in a general way there would be no need

For all the treasures buried far
Within the caves of Istakar.

But these things must be of rare occurrence and at best a lucky chance. The only person who seems as if he could make all sides win, is the present Chancellor of the Exchequer, if we may judge from his great measure for settling the church rates.

There is one expense in preserving game, which, though it comes in an indirect manner, and is not counted out in hard coin, yet perhaps presses as severely as any other, that is the damage done to different crops both of corn and grass. This is a never failing evil to the farmer; and is not only creating a constant annoyance to him by causing a frequent disappointment of his well formed hopes, but a serious loss in a pecuniary point of view. First, when the land is sown it becomes necessary that an extra quantity of seed should be used in consequence of the game. Some imagine that they will only take that which lies on the surface, and which is chiefly the light grain: but can it be supposed that they will give the preference to that, or that they cannot discriminate betwixt the two. After the grain has broadened, the rabbits, if they be numerous, continue preying upon it, and if it happens to be near a cover side, they will so clear it, as it comes up, that it will ever after be prevented getting ahead; and it will appear shorn the same as with a sickle. If the crop has had the luck to rise to any height, it may then get out of their reach; and may be considered partly safe. One with a good strong growth will thus stand a much better chance, than one with a weak one. After it has reached its full strength, it will then only suffer partially, where it has happened to have got laid. Pheasants also do much injury to a potato crop before it is got up. The time when this becomes nearly ripe, is when every pheasant will be, if possible, in a potato field. They will then be scratching up

the roots and pecking at the potatoes for food. The holes thus made will let the wet in, and cause them to rot. But bad as the pheasant is to a crop, the mischief done by rabbits is still greater. Pheasants are only injurious for a short time of the year. During the summer they are chiefly in the hedge rows, and the hens are breeding: in the winter most of them are confined to the covers. A hare is quiet during part of the day, but a rabbit is always at work, and is the farmer's great plague and abhorrence. Wherever they frequent, the land, if pasture, gets tainted, and cattle will then scarcely touch it. In a meadow they trample the grass down, so that it is all work to mow it. Besides which they are constantly nibbling it, so that it is often doubtful whether there will be any to mow, or at least worth the trouble of it.

But their worst depredations are on wheat for actual loss sustained. An instance is known where it was left to arbitration to determine the damages betwixt landlord and tenant. The amount given was £70, the field of wheat being only valued at £86. When it is ascertained, from undeniable evidence, what the consequences are from too large a stock of these destructive depredators, it is not at all surprising that the farmer should be strongly set against them. That he has a just right to a fair compensation for the injury sustained, either by having some allowance in money made him, or by having his farm at a reduced rent, cannot be disputed. Even in cases

where this is not done avowedly, yet it perhaps happens more frequently than is imagined, that on the first taking of a farm, due consideration is given to the quantity of game upon it. It is quite as natural that a person engaging in such an undertaking should as much reckon upon this, as upon poor rates, bad roads, distant markets, or anything else that may tend to reduce its intrinsic value. This indeed in some cases has been known to have operated so strongly, as to have prevented a farm being let at all; as it got reported that the landlord had already stocked it himself.

Rabbits are also the planter's bane. They will destroy whole plantations in a single winter, particularly if it chance to be a severe one. In a snow all the young trees are so bitten as never to recover. Even the larger ones are barked in such a way as many of them to die from it. Hollies they delight in, and will eat through the three coats of bark in those quite of a large size. It has been found of service in very hard weather with snow to cut a number of boughs, particularly of ash, of which they are most fond, and to throw them down for them to feed on. This may check their ravages to a certain degree, but it will not prevent them effectually.

For the good of the shooting world it is a great pity that they are so mischievous, as they certainly present their bodies as excellent marks to a quick shot, and much enliven a battue. For the satisfaction of any

one, who disregards their depredations, they may easily be got up to any number. A large stock of pheasants can only be raised by skill and management; but as to rabbits there requires little more than permission given to increase and multiply.

The objections attending an over large stock of rabbits, are therefore so numerous, and so full of vexations as well as loss, that any one who has regard for the labours of the husbandman, or the works of the planter, will do well to consider, before he encourages their increase on too extensive a scale. When that has been done, it is not always easy to get rid of them again. A set of ferreters, that has undertaken to kill them off by contract, is not always to be depended upon, as it will be their interest to leave sufficient to keep up the breed for another year. It is best to employ two or three sets; and by dividing the whole extent of command into as many districts, and changing the sets about from one to the other, some chance of success may be expected. Even supposing them to be well disposed towards an exterminating system, it is no easy matter to keep down and almost impossible to extirpate by any common means, such prolific creatures, when once amounting to a great head. The ground in which they have burrowed, for any length of time, frequently gets so hollow, and the pipes run so into each other, that even where every attempt has been made, it is often difficult to get them to bolt, and in that case it is no easy matter to take them.

The expence attending a large preserve of game has been now described ; and as we find it far inferior to that of most of the fashionable amusements of the day, it would be unfair to tax the modern system of battues, as causing an extravagant expenditure ; and to cry them down on that account. As much may be said in their favour by those who are well disposed towards them ; and something perhaps against them by those who are opposed to whatever diverts the mind from serious avocations, it may be of use to consider, how far they can be justified and approved of on rational grounds, and whether they are worth all the cost and trouble that attends them.

Battues are of German origin. In Norfolk they have been long a favourite amusement, but they have not been common amongst us generally until of late years. If we consider the circumstances of them, it will appear, that to have them in perfection they belong rather to a country like Germany, than to one which can command from comparison only a confined range. In that country the great lords of the soil possess domains with vast tracts of woodlands, which abound in a great variety of animals, some of them of a fiercer description. A whole district is there driven perhaps for some days previously. The destruction is then usually made by surrounding a cover. Any number of guns are allowed, and often as many as twelve are used. The quantity slain is in consequence very large ; and much exceeds anything we have any idea of here. At Prince Metternich's some years ago

a party killed about a thousand head. The morning following the whole were laid out in front of the house and sold to whoever would buy them. The King of Bavaria has been known himself to kill two hundred hares in a day, and his attendants at the rate of one hundred each.

In Poland in addition to wild boars, which are common to Germany, wolves are a leading article. Prince Sapieha had immense estates there, which have now been all confiscated by the merciless Czar. In a battue there before the late rebellion many wolves were shot. France has long had her chase of the boar, and also her battues. The late Ex-King Charles X, who was a capital shot, was passionately addicted to the latter sport, and devoted himself to it more perhaps than was consistent with his kingly duties. The quantity killed by him each year was something enormous. The royal domains afforded every facility for enjoying the sport to the greatest perfection. A succession of arbitrary monarchs had made use of their absolute power to erect numerous magnificent palaces, and to surround them with commands over extensive districts. These were generally laid out with a view to the enjoyment of field sports. Fontainebleau possessed a wild forest much distinguished for the excellence of its chasses. Then there was Versailles, St. Cloud, Rambouillet, and others, which for splendour and extent, surpassed every thing of the kind in most other countries.

Norfolk stands pre-eminent as the county for

game. In this respect it possesses advantages over every other in the kingdom; and may be considered the same as Leicestershire for hunting. It is in general thinly inhabited, consists of a light sandy soil, favourable for breeding, and possesses large fields of turnips. It is the extent of these that makes it so superior for partridge shooting. The feat of Sir Richard Sutton killing one hundred and ten brace of partridges in a day off horseback, perhaps was never surpassed in this or any other country. There may be some other counties where, in particular parts, as large a head of game may be shown, and where as great a number have been known to have been killed within a certain time; but cases of this kind are partial, and confined to a more narrow district. At Hewel in Worcestershire, in the time of the late Lord Plymouth there were killed in one year 5153 pheasants. No place in England has perhaps exceeded this. It shows that pheasants by strict watching and good management may be raised to almost any extent. The whole system of preserving is entirely an artificial one.

When we look at the state of some of the manufacturing districts, and the disadvantages they labour under, it may appear surprising to those who have witnessed it, how so large a show of game can be got up in these, as is sometimes exhibited. It is only by the persevering labours of the over-lookers that this can be accomplished. In one respect it may perhaps be an advantage. If the preserve be situated near a

populous town, the keepers are kept constantly on the alert, as if they relax, but a little, in a few minutes all the mischief may be done. There is scarcely any thing but what large means, and these judiciously directed, can effect. Money, the main sinews of war, will make crops spring up in barren sands ; and will raise an extraordinary head of game under most forbidding appearances.

One great cause of populous districts being adverse to game is that most of the land is in grass. Where there is a great demand for milk and butter, the most profitable farming is that which can give a ready supply of these necessary articles. A good rich pasture will pay better, and fetch a higher rent, than arable ground, even when wheat is selling better than six shillings a bushel, as was the price lately. In a country so circumstanced it would be an absurdity to suppose that it could compete in quantity of game with one better adapted for it, perhaps from quality of soil, as well as the mode of cultivation. If there was any land that could at all vie with other more favoured countries in this respect, it would be that in the neighbourhood of some of the mosses, which abound in the northern parts of the kingdom. There both the soil and the cultivation are favourable for breeding. A whole district in tillage with a mixture of corn, clover, and potatoes, makes just as good shooting ground as can exist anywhere. Potatoes are excellent for sport, whilst they last ; and come very near to turnips. But then they are all cut down by

the first frosty night, and then farewell to the chance of getting near to partridges for the remainder of the season. What is also very unfavourable in the north is the climate: the quantity of rain that falls there, and most frequently in the most critical month of the year, July, makes a really good breeding season a rare occurrence.

In these districts partridges almost always suffer then severely. Pheasants may do somewhat better, as they begin their breeding earlier, and continue it later. There is therefore a better chance of more escaping. Perhaps there never was a thoroughly good year there in the memory of man except in 1826 and 1827. Then it was not uncommon for thirty or forty brace to be killed in a day. Now twenty brace would be considered a good performance.

In a populous district there is more danger of being assailed by gangs of marauders formidable in numbers and atrocious daring, than in one more thinly peopled. There is also another kind of night shooting, which is still more common there. There must always be some of notoriously bad characters, who will not get a livelihood by honest means. These perhaps begin by first snaring a hare. Like the hound that has tasted blood, this gives them a relish for the pursuit of game, of which it is next to impossible to break them afterwards. They advance on by degrees in taking a chance shot at night when they think the

keepers are off their posts. It is difficult to fall in with adventurers of this kind, as they come at uncertain hours, and seldom wait for a second shot. If they happen to be met with, they are easily taken, as they seldom show fight.

There are also other difficulties to contend with, where the population is abundant, which are almost as injurious as attacks of poachers. The mischief done by accidental trespassers is great, particularly in places where the country is much intersected with roads and foot-paths. Every house has a cat. The destruction these commit is beyond belief. If one of these falls in with a brood of young birds, they will be presently all destroyed. Partridges particularly are generally found at a particular time of the day about the same place. Success in one instance will be sure to encourage a repetition of the offence. When game has been once tasted, all other sorts of food lose their relish.

The sporting world owe a debt of gratitude to Lord Spencer, for having grappled with the difficulties attending the legal enactments for game; and for having effected such an entire revision and amendment of the former miserable system. Nothing could be more complicated, more unjust, or more inefficient, than the footing on which it stood previously. The qualification was derived from old feudal customs, and was wrong in principle and practice. It was difficult to know who were really qualified; and still more,

why those were not, who ought to have been so. A certain number of acres would give a person a right to shoot wherever he pleased, or until he had been warned off. A younger son of a Peer, unless he possessed such acres, subjected himself to a penalty every time he killed a partridge. The principle upon which the new Game Act is founded must be allowed to be just to all parties interested, and powerful in maintaining the rights of property. The results of it, in a general way, are beneficial. There may be particular instances, where property is so situated that it has operated injuriously ; but no law can adapt itself to every possible case. It is certainly more favourable to a large command than a small one, to one that lies united and entire, rather than to one that is divided and intermixed with others. A person who has a small possession lying within a large preserve belonging to another, has an opportunity of destroying game which he did not rear himself. But, in a case of this kind, there is generally a chance of coming to a fair compromise. It is nothing but right that an ample and liberal price should be paid for the use of land so situated. It is of more value to the owner of the adjoining preserve than to any one else ; and if an offer is made of a handsome kind, and in a good spirit, it is not likely to be refused.

According to the old law, a person might trespass the first time with impunity. A notice had then to be signed by every tenant, which perhaps would take many days to effect. On a second trespass an action

lay at the assizes. But what would it cost to take it there? Cases have been known where this could not be done under £70, and in general it would not be done for much less. But in case the tenant, on whom the trespass had been committed, chose to turn round, and not to appear, the whole conviction fell to the ground, and the expense would be thrown away. The summary proceeding that is now always ready at hand, has put a nearly insuperable bar to such trespassers. That class of citizens, who went marauding partly for the sake of the sport, but more for the sake of the pot, are now almost an extinct race; or at all events, like the savages in North America, they have been driven into the back settlements.

The mitigation of the punishment for being found shooting at night, seems to have been attended with a good effect. It has now been sufficiently established, what would have appeared incredible to our ancestors, that severity of punishment rather tends to increase crime than diminish it. When men are habituated to a course of dishonest practices, and have had recourse to an organized system of poaching, it is not so much the dread of what the consequences will be in case of apprehension that will deter them from the attempt, as the probable certainty of their being apprehended. The end therefore must be attained by the terrors of a formidable opposition, rather than by the terrors of the law. On the other hand, by the taking off the severer parts of the punishment, the conflicts betwixt the two parties have

been less violent ; and from the supplies of game in the market from other quarters, occurrences of this kind appear to have been less frequent.

The forbidding the use of spring guns, was supposed at one time to have removed out of the way a powerful prevention : but it may be doubted whether that has been the case. An experienced poacher would have the art to avoid them ; and it has been known that he would not hesitate to go by night into the cover where they were laid ; and would avoid letting them off. For the good of humanity it is well they should be abandoned. There was always a danger of the injury inflicted falling upon the wrong person. Even the lord of the preserve stood the risk of being the sufferer from his own contrivances, like Phalaris of old, who was roasted in his own bull. Detonating exploders, and luminating identifiers have been invented as aids to the keepers. These may be permitted as substitutes to the other.

Where the plagues that infest game preserving are almost as numerous as the plagues of Egypt, it is only by a thorough knowledge of his business on the part of the head-keeper, by his unremitting activity, and by seeing that the subordinate agents do their work steadily and perseveringly, that the object can be fully attained. The qualifications wanted for a head-keeper are numerous and of a particular description. He must have an unshaken nerve for a night affray, but be able to conduct it with more coolness than

The Lower Ridding



More haste the worse speed

bravado. If he exercises a proper judgment with a marked firmness of character, he will in general avoid a serious dilemma, or a sanguinary contest. Men shrink from proceeding to extremities in a bad cause, and if they are resolutely but quietly faced, they will not commit a wanton act of aggression; nor at all, unless in a case of great emergency. A poacher generally makes himself acquainted beforehand with the sort of opponent he has to deal with, and will act accordingly. But it is not only by keeping a vigilant watch and showing a determined front by night that the services of a head-keeper are to be distinguished. There are many things during the day time, that require his constant attention. By having a thorough knowledge of his ground, and seeing that his subordinate assistants are constantly on the alert, he will often have opportunities of discovering whether any improper practices are going forward, that want correction. Each under-keeper should have a separate district of his own for which he should be accountable. The head man, being placed over the whole, should be fixed at a central point, where he can have an eye to whatever is wanted. Frederick the Great, King of Prussia, used to say, that a king should be always on horseback. To compare great things with small, a head-keeper should be always on his legs. He should gain a knowledge of the quantity of game on the whole preserve; and see whether there was a diminution of it by improper means; and if so, call the superintendent of that particular part to an immediate account for it. His conduct should be sober,

civil, and respectful. Keepers have more excuses for getting addicted to strong liquors than most other men, but though occasional acts of intemperance are so common amongst them as to be considered almost allowable, yet in cases where it becomes an habitual vice, it is the greatest fault that can be committed. It unfits them for any continued exertion, it gives bad associates and it incapacitates at a time when their services are most wanted. When inveigled into a public house, or when they are known to be there unfit for duty, then is the time when the poacher is active in his deeds of darkness. It may be of service at times for a keeper to frequent the houses resorted to by the poaching confederacy to gain a knowledge of their persons and characters, and perhaps of their plans. It is quite extraordinary how open and communicative this description of people are as to their different marauding expeditions: they will often tell not only where they have been, but where they mean to go.

A civil demeanour never costs any thing; it generally has its own reward, a contrary one has almost invariably its punishment. A keeper should be on friendly terms with all those around him. He should try to ingratiate himself with the farmers, and make them his useful instruments in preserving, instead of his enemies. There is no saying what mischief a spiteful tenant may do by putting his foot into a nest, or otherwise doing harm in a thousand ways. If a farmer even is inclined to be peevish, it is better

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Penwortham Church.



Now and sure! (on the Old Style!)

rather to put up with it, than to retort upon him. Every allowance should be made him for perhaps a just cause of complaint. His fences may have been broken down, his gates left open, and cattle may have injured his crops. His corn may have been devoured by rabbits, his beans by pheasants. Let it be considered when pains have been taken to raise a fine crop, (and when it has been hard work too to scrape together a rent,) what provocation there often is for serious dissatisfaction and garrulous remonstrance.

To say that a keeper should be respectful to his superiors, is so much a matter of course that it needs no comment ; but by showing civility to all, he gains good will, and he lessens his own labour by interesting others to promote his objects. The example set by an upper servant, whether for good or for bad, is generally followed by those under him. Nothing is more true than that it is the direction given by the head of the department, and ably propelled by power and judgment, which gives the impulse to the inferior orders, and leads to good results.

One great objection to the present system of battues is, that the generality of preserves affords so very little shooting during the year. The good old times are quite gone by, when the veteran sportsman started at break of day to traverse a wild woodland, and returned home contented, carrying in his netted bag hung upon his shot-belt, perhaps a couple of woodcocks and occasionally a rabbit. A hare, except for the use

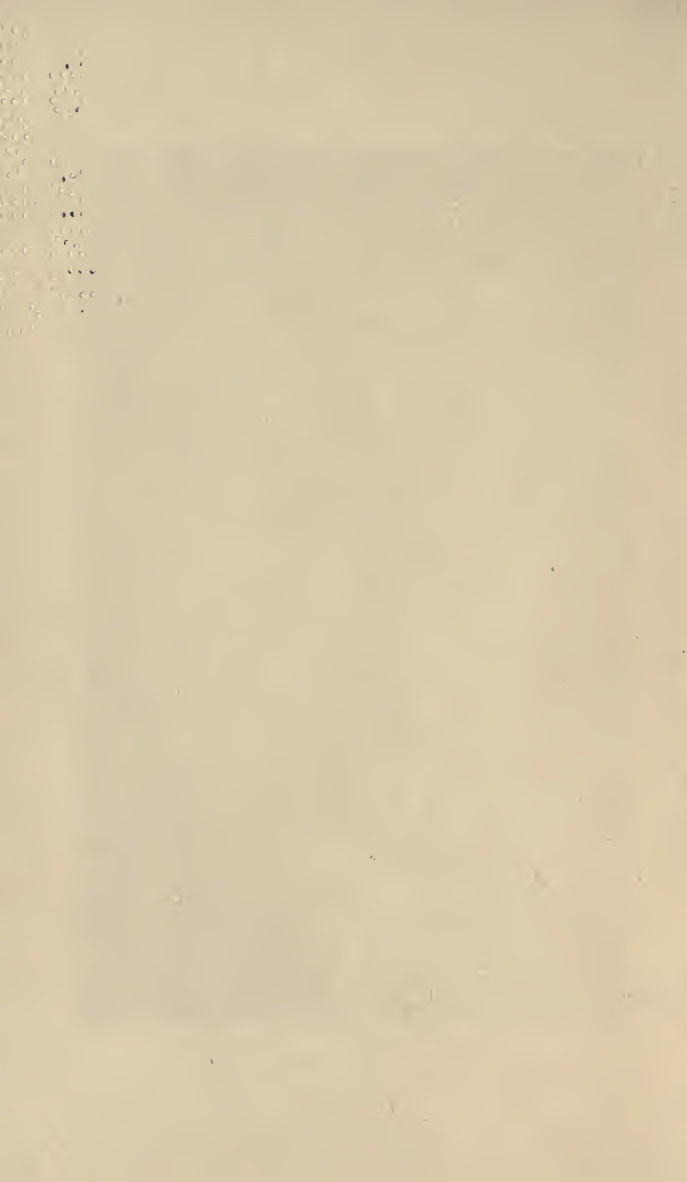
of the kitchen, he would never think of molesting; and if he was himself an eager pursuer of that much persecuted animal with the industrious beagle, to shoot it would have been looked upon almost in the light of a parricidal act, or next in gradation of crime to treason against the state. But though the times are altered, and though an unreasonable outcry may be raised by some against the system of battues, as exciting the rage of competition, and many evil passions, yet it cannot be denied even by its greatest admirers, when we consider the enormous expense that attends giving a real good day's sport in the modern style, that it is a subject of regret, that the enjoyment is confined within so limited a space.

A cover is made of perhaps from fifty to sixty acres in size. A large stock of game of every variety is raised in it. A great display is intended to be made on some particular day. Many of the crack shots of the country are invited to attend. The cover is beat once, and if daylight will permit, is perhaps gone over a second time for the purpose of creating a better figure in the return. By these means a great slaughter is made for the quantity seen. The limited number of hens is killed early. At the second beating, every cock that has escaped from the first attack lies so dead, that he becomes almost a certain shot; and unless he gets up under the feet of a bungler, or, as he is sometimes denominated, one of the thread and needle tribe, he is sure to get knocked over. Of the few that avoid their pursuers, many of them quit the

The Round Wood



No other goods. Foxes try the best policy.



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Blashaw Dam



Fair play's a jewel

cover probably never to return to it. What ensues next? The cover is shut up for the remainder of the season; and never more that year is a gun fired in it, except it be visited by the night prowlers in search of their prey, which however may very likely happen much more frequently than may be suspected by either master or man.

Now there is no reason why an amusement that is attended with many advantages both public and private should be criticised too severely; and even if it be admitted that the charges brought against it are true to a certain extent, yet even these, if they exist at all, are counterbalanced with what makes ample compensation for any little harm that may be said to attend it. One of the most heinous objections alleged against it is, that it engenders jealousies and a bad spirit. Now it is certainly true that it may excite a little jealous feeling in the breasts of some, when they find their neighbours knocking down every thing right and left, and they themselves are doing little more than beating the air. It may occasion a less exhilarating sensation in these, when the return is brought in, and talked over amidst the liberal potations of the night, when they find themselves below what may be called the zero point on the list; but then the elevation of the spirits that is excited around the table by a good day's sport, serves to banish such selfish mortification, and the merriment of the whole party, may possibly be enlivened by the animating exclamation of the hero of the day, that the sport equalled the grand

battues at Holkham, and actually beat the great performance at Ranton Lodge.

A further objection may be stated to this kind of diversion, that it engages too much of the attention, which ought to be applied to other and better things. A distinguished baronet, well known for his splendid exhibitions in the senate as well as his love of fox-hunting, has been heard to say, that a man who hunted, should have two lives; one for hunting, the other for business. It is impossible to take any good quite unmixed with evil; and no doubt, if all the time and thoughts are engrossed by one absorbing pursuit, which exercises body more than mind, it is highly reprehensible. But then it is to be considered, whether it does not only become harmless, when taken in moderation, and not excluding rational duties, but is absolutely of service in promoting other good objects. It will be allowed by their greatest opponents, that these hardy sorts of exercises strengthen the character, and prepare the youths of Britain for more arduous services in their country's cause. The greatest general of the day, or of this or any other age, himself a great fox-hunter, it is said, has been known to declare, that he preferred employing a cavalry officer, who was a fox-hunter, on any difficult expedition, because his having a quick eye across a country would give him a great advantage. To warrant success in war as well as the less perilous contest of the chace or the battue, there is wanted, "a frame of adamant, a soul of fire." If these valuable qualities are to be generated by such

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The Crow-Wood



The misfortune of being under the mark.

exercises, or the natural elements of the constitution invigorated and improved, these amusements are not without their use. It is to be hoped that the day is far distant, when sedentary habits and employments, are alone to be cultivated. If this was the case, there would be danger of more serious consequences to health and morals, than there now is to the purse from too extravagant a pursuit of a passion so inviting.

But dropping this subject, let us consider the enormous expense of battues, and their not admitting a cover to be beaten except on great occasions, and perhaps not more than once in a season. It remains to be seen, whether, if they are desirable as a reasonable recreation to add to the charms of an enlarged hospitality, and to raise to a higher standard the powers of the higher orders, mental as well as bodily, some plan cannot be devised of affording more amusement and more days shooting at the same expense and trouble of preserving.

The plan of having a central depot surrounded by minor covers lying so contiguous to each other, as to admit of frequent communication betwixt the game within, is of use in keeping the pheasants together, in rendering them disposable at the will of the feeder, and in enabling some if not all of the covers to be beaten, under proper management, as often as the owner could wish. The pheasant the same as any animal that is pursued, has generally an object to make to; and unless diverted from it by insuperable diffi-

culties will naturally fly to it. If he is driven from one cover to an adjoining one, and he there finds himself protected, and feed provided for him, he will remain there. But if forced into the open, a country to which he is perhaps a stranger, he soon gets bewildered, he is afraid to return, and he then becomes lost to the preserve.

By the covers lying in this way conveniently disposed to each other, the game may be drawn, by the means of feeding, into any cover that may be wished. A good or a bad day's sport may be given. If the former is wanted, the smaller covers may be left unfed for some days before, and the whole stock will soon be collected into the larger preserve. When this is beaten, care must be taken to feed the smaller ones the day before. In beating the smaller ones, no two adjoining ones should be taken the same day. A pheasant then gets shot at only once, and if not killed, will find a sure place of refuge, and then be not so likely to stray away.

But the great advantage of this plan is, that after the covers have been beaten once over, some of them may be left unfed either for a time or for the season. The game being by these means brought into a smaller compass, there is less extent of ground for the keepers to watch : and by doing this, cover shooting to a considerable extent may be going on continually through the whole season, as it matters not then how often these are disturbed. Those should be more particularly

The Hangman's Park.



A kind of the hand's worth, were the Park.

selected for frequent use that are good for woodcocks ; and if some of these can be met with, and there is a tolerable sprinkling of other things to shoot at, such a day's sport at any time may be given for a few guns, as before the introduction of a more liberal system, would have done much more than have satisfied one of the old school.

The present mode of battues cannot be conducted in good style without a heavy expenditure being incurred. In some large preserves it comes to several thousands a-year. As under any circumstances it must be of serious amount, and quite unavoidable, it seems not desirable to enter into it, unless the command is sufficiently extensive, and combining the requisite advantages to such a degree, as to be capable of giving satisfaction to the parties concerned. There is almost as much trouble and anxiety in preserving a piece of land of small extent, as one of a larger size. There must always be a strong effective force ready to contend with any assailants, and who are sufficient in number to keep up a continued watch during the greater part of each night. Without this, hope ends in disappointment, and the fairest prospects are blasted. After all that can be done by the best laid schemes, and the most active exertions, the greater part of our undertakings are liable to a variety of crosses and vexations. Accidents will happen from natural causes. Other contingencies occur which no care can foresee or prudence prevent. The toy so keenly sought brings a short-lived and dear-bought pleasure ; but life stag-

nates without excitement; and, as the mariner, who escapes with his life from shipwreck, endangers it again amid renewed perils, so we are apt not to take a lesson from the past, but court fresh trials and adventures.

Nor can it be surprising, when we consider the advantages attending such a gratifying diversion, that so many enter into it with eagerness, notwithstanding all the crosses and difficulties that rise up in the pursuit. If ample means are within reach to insure success, first from an adequate and undivided command of territory, and secondly from the pecuniary resources necessary to preserve it efficiently, there is nothing more deserving the attention of a landed proprietor than to have well-stocked covers on his estate for the purposes of a battue. In the whole catalogue of field sports there is nothing in any of them that can at all compare with the excitement approaching to madness of a quick burst after fox-hounds. With a view to this Leicestershire stands unrivalled in fame, and Melton, the metropolis of the hunting world, offers many powerful attractions to the ardent lovers of the chace. The exhibition, at the place of meeting for the hounds, is of itself a brilliant spectacle. So large a display of the noblest and most useful of all the animals, in the highest condition for speed and wind, and distinguished for their beauty of form and symmetry of proportions, cannot be equalled in any other country. Then there is the find, the going away, the surmounting a difficulty, the struggle for pre-eminence "which makes ambition virtue."

West End of the Four Arre



The Gay Deceivers, or more than them, sure





Forrick from Blashaw Wood.



The Destroyers, or Killing of Murder

“Th’ impatient courser pants in every vein,
And pawing seems to beat the distant plain :
Hills, vales, and floods appear already cross’d,
And ere he starts, a thousand steps are lost.
See the bold youth strain up the threat’ning steep,
Rush through the thickets, down the valleys sweep,
Hang o’er their coursers’ heads with eager speed,
And earth rolls back beneath the flying steed.”

POPE’S WINDSOR FOREST.

Yet, whatever may be the fascinations of a powerful passion, it should be recollected, that it is only in the gay season of life, when the pulse beats high, and the nerves are firm, that success can be expected in hazardous enterprises. When these fail, a large sacrifice may be made of health, wealth, and even wisdom, and notwithstanding this, the defeated competitor may retire from the field subject to disappointment and self condemnation. But, when the senses have sobered down to more tranquil enjoyments, and when the powers of the body have somewhat yielded to the advance of years, then comes the battue to give a reasonable recreation on the easy terms of moderate exercise and temperate proficiency. This may be enjoyed whilst sojourning in the bosom of the family circle and in the midst of neighbours and friends surrounding the accustomed mansion. No hoar frost puts its chilling prohibition on its delights. No vexatious atmosphere, holding in suspense an expected thaw, can turn hope into disappointment. It goes on in its even course, without regard to the temperature of the sky, dealing out a gentle exercise, and a pastime, which, though varying in degree, may be attained by

all ranks properly qualified, and all classes of proficient in the art of the trigger. It holds out a strong interest both in looking forward to it, and in actual enjoyment. The scene itself, even to a bystander, is one of a most animating description. A remarkable instance might be adduced of a much lamented Baronet (who alas! can no longer now participate in the pleasures of this world,) who, being from bodily infirmities prevented taking an active part in such performances always seemed to derive as much amusement from being a spectator, as many of those who were actively engaged in it. The present quick way of shooting greatly surpasses the old style, when with the use of a flint lock, and with a cock to it having a large sweep, it was thought necessary to aim some way in advance of the object, and never to pull until it had been followed to a respectable distance. The dexterity, with which it is now done, is such, that a rabbit can scarcely stir from his seat, before he gets knocked over. Then the sight is of itself beautiful to see so many birds in the air at one time, and those so brilliant in plumage, so elegant in form. A hare starts affrighted from his seat and hastens from his pursuers, his speed is suddenly stopped by the leaden death. A rabbit darts quick from his lurking place, he is soon laid low amongst his slaughtered companions. A woodcock rises on the wing and skims rapidly through the glade ;

“ He falls and leaves his little life in air.”

The old tenant of the wood mounts aloft, as if bidding defiance by his crowing, and seeming to brave



East End of the Four Aces.



The Destructives or three good things better than one.

his fate ; he is suddenly arrested in his flight—and drops dead : or to speak in the same melodious strain, to which we have just listened ;

“ See from the brake the whirring pheasant springs,
And mounts exulting with triumphant wings :
Short is his joy ; he feels the fiery wound,
Flutters in blood, and panting beats the ground.
Ah ! what avail his glossy varying dyes,
His purple crest, and scarlet circled eyes,
The vivid green his shining plumes unfold,
His painted wings, and breast that flames with gold.”

When a number of pheasants have been driven to the end of a cover, and rise at one time in a large quantity, making what is called in the technical language of the sport, a skyrocket, or according to the French idiom, a *bouquet*, great destruction is often committed. In a case of this kind, it has been known that as many as three have been killed at one shot.

A retriever is a great assistant in a battue, particularly to a bad shot, as it often brings other people's game as well as its master's. At the same time, if not under proper command, it may do mischief, especially in small covers, by putting up the game out of reach. The sagacity of many of these animals, in some cases, is very extraordinary. It has been mentioned that one bringing a dead piece of game, and seeing a hare go away wounded, has dropped the other, and after bringing that, has returned of its own accord for the piece it had first held. This is approaching nearly to reason. Indeed the line of demarcation betwixt that and common sagacity (for call it what you will, the latter

in many cases almost amounts to the other,) is not easily distinguished. It is a common occurrence that a dog, if taken by a circuitous route to a distance, in a strange country, will find his way home by the straightest road. In like manner a fox, if conveyed in a bag to a place far from home, and turned out, will be back again at his own cover in much less time than the man who took him, unless he should travel by one of Mr. Stevenson's carriages on the railway. A well known fact is on record of some fox-hounds, which the late General Burgoyne sent as a present to the Duke de Choiseul, in France. A pack of these was conveyed to his palace at Chantilly. The persons employed in conducting them, after having remained some time there, to reconcile them to their new abode, took their departure. They had arrived on their road home at a large wood not far from Calais, when they were suddenly alarmed by something behind springing upon them, which they at first took for a wolf, but to their great surprise they found it was two of the hounds that had got loose, and had followed them. They had probably hunted out their old keepers by the scent, but the most remarkable part of the story is, that they must have had to pass many fortified towns, where the gates were constantly closed at night. They must therefore have quitted the track they were on, when they met with these, and fallen in with it again by going round them. A story is also told of a dog, that had been taken by sea from Liverpool to Plymouth. There his master went on shore, left him accidentally behind, and then sailed without him. The dog arrived

Pewortham



Muff, a favorite Retriever

at Liverpool again, but in what manner he got there still remains a mystery. This, marvellous as it may appear, is not more extraordinary than the migration of birds, which no doubt is intended, after the order of nature, for wise and benevolent purposes. A pig does not appear a particularly sagacious animal, though an exhibition has been represented of the pig of knowledge. A pig was once taken about twenty miles, shut up in the boot of a carriage. In the night of his arrival he escaped from his place of confinement, and returned of his own accord to his old habitation. What makes the matter more curious is, that snow having just fallen, his footsteps were traced, when it was found, that in one place he had turned down a wrong road; but having discovered his error, he soon returned to the right one again.

The sagacity of the horse far exceeds any idea that is generally entertained of him. His eye is significant and expressive; his nostrils assume a variety of forms and appearances, according to the passion that is at work; but the remaining features are dead and inanimate. He betrays outwardly little consciousness of what is passing within; his likes and dislikes are not strongly marked; his sense of injuries received is often apparently of a passive kind; yet is he endowed with the keenest sensibilities; he possesses the strongest and most lasting recollection of persons and things. A remarkable instance of ferocity occurred in a horse belonging to an officer of the 10th Light Dragoons, shewing the excited spirit of a deadly re-

venge. The farrier of the Regiment had treated him with much severity. On his going up to him in the stall, some time afterwards, the horse having slipped his halter, flew at him in such a violent manner, as to make him take shelter under the manger, and to escape from thence in an opening to the adjoining stall. The enraged beast did not stop there, but pursued him from stall to stall amongst the other horses in the same stable, so that it was with difficulty the man could be extricated from his perilous situation. Something of a similar kind has been known respecting a horse that had suffered from shoeing. He would never afterwards allow a blacksmith to come near him, and was consequently obliged to be cast, whenever it was necessary to have him shod.

But if their impression of passing events, as relating to themselves, is strong and their memory retentive, so are their faculties endued with a surprising capability of acquiring through proper discipline not only the knowledge, but the practice of difficult performances. We need only see the feats of horsemanship at Astley's to be convinced of this ; to behold the animal receive as it were the fatal wound ; to counterfeit symptoms of pain ; and to yield by degrees to an apparent death ; then, like a lifeless corpse, to be lifted into a cart, and patiently submit to be cast from thence into a grave prepared for him without the voluntary movement of a single limb. When an insect seemingly so insignificant and useless as a flea, can be taught a variety of marvellous tricks, we need not wonder that an

animal, which is given to man to assist him in his labours, and to afford him both pleasure and profit more than any other in the whole creation, should be gifted with enlarged capacities to fit him for the different offices required of him.

After so many instances well authenticated of inbred sagacity in different animals, we may well believe that the retriever may possess an intuitive knowledge of the uses for which he is intended, and by proper training may learn to put his discoveries in practice. A shepherd's dog is said in many cases to have a wonderful power of discrimination, and to know every sheep in the flock. Things are related of it almost beyond belief.

If this were the place to moralize, and to contemplate the works of the Creator, we might draw an instructive lesson from the innate powers of animals. We might perceive that those gifts had been bestowed on the brute creation, that were best adapted for their preservation and good, and also for the use of man. This would teach us, that the vices that are frequently considered as inherent in the nature of some, proceed rather from mismanagement or brutality of treatment, than from any fault of their own. We might learn to correct, what is amiss, by a proper course of training, and not by a misplaced barbarity. Further, we might apply their case to ourselves. If God has so endowed the mute and irrational beasts, that perish eternally, with powers that can be so quickened and improved,

may it not be supposed that the mind of individual man is without limit, either as to the degree of its intellectual capacities, or its moral condition! The same analogy holds good with the mind as it does with the body. When we see the tricks of the juggler or the feats of the rope dancer, we must know that all this corporeal agility can only be attained by long preparation and persevering labour. Who then can say what is the extent of his own mental powers, or form a fair estimate beforehand to what a height they may be carried, if placed under difficult and trying circumstances?

But to return from this digression. If the battue excites a never failing interest in those who follow it, it is not less a promoter of hospitality from its assembling together large parties in a social way. In a fox-hunting country, hounds and their places of meeting are generally objects of attraction, which serve a purpose of this kind. But where there is no such point of union, "when rain and wind beat dark December," something is wanted to cheer and enliven the drooping spirits. It is a trite saying, that man is made for society. Without it his temper is in danger of becoming morose and selfish. The high polish of the present day has banished low and vulgar mirth, and has prevented the passion for field sports being carried to an intemperate excess, or the topics relating to them engrossing too large a share of conversation. In the improved intercourse, that is now going forward, there is no fear even of a good day's sport leading to too free

a use of the bottle. The old country squire was one of a race of mortals now happily extinct. The Squire Westerns of their day, are quite gone by. These were a set of beings of a more distinctive character than those of modern date. They possessed much honest feeling, and a great cordiality of disposition, with an extravagant expression of it. Their stock of amusing qualities chiefly consisted in a ready supply of broad humour mixed up with much ribaldry and coarseness of sentiment. These traits which were then marked with more strong and varied lines than at present, have been now softened down into a more general sameness, amounting in some respects to insipidity. But if something has been lost in a bold and vigorous outline, much has been gained in polish and refinement.

Of the different reforms that have taken place of late years, there is none more important and salutary than the reform of manners. The writings of the day hold up to view the best mirror of the character of the age. All the filthiness, with all the wit of Swift, would scarcely find access now amongst the lowest grade of society. His writings exhibit, in a coarse colouring, much of that sort of obscene licentiousness, that can only gratify mean and vulgar minds. A better sense of decorum mingled, it is to be hoped, with a better moral feeling, has driven such impurities from conversation; and if vice exists, in the words of a great writer, "it has lost half its evil, by losing all its grossness."

But if a change for the better has taken place in

this respect, and a more refined delicacy of thoughts and words has been introduced, the powers of the mind have been also called forth and elevated by a sense of duties imposed. Improvement of character has kept pace with the diffusion of knowledge. New interests have been created amongst different classes from objects of a public nature, and the sphere of their action has been enlarged. In no other country in the world is a character to be met with similar to what is styled amongst us a country gentleman; one who lives upon his estate, having active duties to perform, and doing good to all around him. It is told of a person travelling in France, that hearing, as he passed through a village, that there was a considerable landed proprietor resident in the neighbourhood who spent all his time on his own property, and was a complete pattern of a country gentleman, he felt his curiosity excited, and was determined on paying him a visit. He accordingly called upon him, and found him seated at the top of a high tower, in a pea-green coat, and playing on a guitar. An English country gentleman certainly passes his time in a very different manner. He may build a tower for the embellishment of his grounds, but not for indulging in frivolous amusements. He may enter into rural pursuits, but not devote his whole time to them, like the country squire of old.

Better to hunt in fields for health unbought,
Than fee the doctors for a nauseous draught,
The wise for cure on exercise depend,
God never made his work for man to mend.

At no period was the Squirearchy of Britain more engaged in useful occupations than at the present time, acting as good magistrates, good landlords, and good christians ; and so long as this is the case, and other more important objects are not neglected, no harm can arise from a moderate and reasonable enjoyment of the sports of the field, but on the contrary the greatest good. Besides advantages from it of a personal nature, it gives them an interest in what is going forward around them, and attaches them to the soil on which they live and prosper. Any thing which holds out an inducement for a residence there, is conferring a greater benefit on themselves and others, than the yielding to the indulgence of the sickly vanities and feverish excitement of a luxurious metropolis. Much of the strength of England depends on those who, far from cities and in the midst of rural occupations, are engaged in the exercise of moral and practical virtues.

The principal thing for happiness in this life is constantly to have an object before our eyes. If utility can be combined along with it, so much the better. This in our more serious employments is the chief consideration. But all our time cannot be devoted to these. There must also be the hour of relaxation, and this mingled with a rational recreation. How can this be better attained, than in promoting an amusement which gives health and vigour to the limbs, and cultivates good humour, and good fellowship amongst all those who partake of it. It is always a blessing to

have something that will drive away "the pains and penalties of idleness." The story, related by Dr. Johnson, of the tallow-chandler, should never be forgotten ; who after having made a fortune, and having retired from business into the country to enjoy it, found his time hang so heavily on his hands, that he at last desired to be informed when was the day for melting, and he always rode up to town to be present when that was going forward. Now although we may not long for the melting day, yet many of us might repent, if the active pursuits of life were entirely abandoned. There would then be danger of its leading to listless weariness, and in the end to morbid apathy. Ease and exercise set off each other to advantage, and by a happy mixture of the two, mind and body are alike recreated and refreshed.

An attempt has now been made, to enter at length into the whole subject of the preservation of game ; and to suggest a plan by which the largest stock can be best raised and maintained. It has been shown that the proper formation of covers is a point most conducive to success in such an undertaking ; but in paying regard to this, another object, which should be the main end of all planting, is not to be overlooked, the making the greatest profit from timber. This is best attained by proceeding on correct principles. A thorough knowledge of the properties of trees, and of the laws by which nature governs their growth and improvement, is necessary before a perfectly good and useful system, in its different branches, can be arrived at.

The information given on these points has been drawn from the most authentic sources ; the highest authorities have been quoted. But as theory is often more plausible than practicable, an improved and tried method has been recommended, and detailed in its minutest particulars, by which the two objects, already named, can be best attained. Ideas and opinions, scattered at random over various works, have been collected into a small compass ; and have been placed in such a light, as to afford instruction to those who have not already made the subject their study : to those who have, it may raise a new spirit of inquiry.

A treatise of this kind detailing the whole culture and treatment of plantations, from their earliest creation to their maturity, may rectify some of the errors hitherto too prevalent ; it may serve as a manual to any country gentleman who may take an interest in such matters, and who may wish to direct his attention to results that will be a benefit to himself, and at the same time be the means of affording gratification to his friends.

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